SAINT-PETERSBURG STATE ELECTROTECHNICAL UNIVERSITY
(LETI)

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Sociodynamics of IT Specialists Integration in the Digital Environment

(A Case Study of IT Groups in Russia, China, the USA, and Brazil)

Scientific specialty 5.4.4. Social structure,

social institutes, and processes

Cand. Sc. Thesis

in Sociological Science

Translation from Russian

Academic Advisor

Doctor of Social Sciences

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Saint-Petersburg

2023

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Introduction

The sociodynamics of the socio-professional integration of IT specialists significantly reflects the dynamics of development in modern societies [1], which are increasingly shaping up as technology-dependent entities. This is not incidental. With the advancement of the information technology industry, the process of shaping a networked society intensifies, elevating its dynamism [2]. Consequently, scholars' interest in researching the sociodynamics of integrating professionals within the digital realm, those at the forefront of these changes, becomes increasingly relevant [3]. As it is known, values shape the fundamental behavioral patterns of IT specialists [4], and the dominance of specific values is reflected in their behavior and integration strategies. These values also serve as social indicators of ongoing processes within IT groups and their interactions with other social groups. The socio-professional group of IT specialists plays a significant role in ensuring Russia's sovereignty and technological independence in the modern world.

The relevance of the study is primarily determined by the natural growth of the social and professional group of IT specialists. According to the Russian analytical agency TAdviser, the number of IT specialists in Russia is expected to reach 1 million in 2023, with an annual increase of approximately 400,000 new employees. It is anticipated that by 2025, the total number of developers worldwide will reach 28.7 million. For instance, Sberbank alone employs 38,000 IT specialists, and their numbers continue to grow.

The sociodynamics of socio-professional integration of IT specialists in Russian society reflects certain differences from established systems of values in national

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[1] Braslavsky, R., Kozlovsky, V. Civilization Dimension of Societal Structuring. // Sociological Review. 2021. No. 1. P. 148.

[2] Ptitsyna, S. S. Manuel Castells' Network Society Theory: Theoretical and Sociological Analysis // All-Russian Journal of Scientific Publications. 2011. No. 3 (4). P. 55.

[3] Trubitsyn, O. K. Formation of the Network Society Theory // RUDN Bulletin. Series: Philosophy. 2011. No. 2. P. 45.

[4] Vodopyanova, N. E., Zhurina, M. A. Features of the Value-Motivational Sphere of IT Specialists // Bulletin of Kostroma State University. Series: Pedagogy. Psychology. Sociokinetics. 2020. No. 2. P. 92-93.

culture, which are related to new challenges and modern trends in the development of modernization institutions. These have led to changes in the structure and institutions of the departing world [5]. With the onset of digitalization, the established professional group of IT specialists has become a social element within society, shaping new forms of social differentiation and interaction [6]. Contemporary society acknowledges the emergence of a new group - IT specialists - whose numbers will only increase in the future. However, the question remains open: what will characterize the qualitative aspects of the socio-professional integration of this group, and what strategies will define this integration[7]?

The concept of "integration sociodynamics" is elucidated through the exploration of numerous social, professional, and cultural factors associated with the inclusion of IT specialists in the professional community and social space [8]. Research by V.A. Yadov and his followers demonstrates that it is the system of value orientations that determines the substantive aspect of personality integration. This includes the personal characteristics of IT specialists and shapes their attitudes towards themselves, others, and the world as a whole [9]. Furthermore, the sociodynamics of socio-professional integration demonstrates trends in the formation of ideological and motivational sources of life activity, laying the foundations of the worldview for IT specialists.

In the conditions of globalization and openness of modern societies with different value systems, including the social formations of other countries, the problem of shaping socially significant value orientations among Russian IT specialists

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[5] Oberemko O.A. Social Identification and the Quality of Social Structure // Southern-Russian Journal of Social Sciences. 2006. No. 2. P.18.

[6] Polozhikhina M.A. Informational-Digital Inequality as a New Form of Socio-Economic Differentiation in Society // ESPR. 2017. No. 2.

[7] Osadchiy V.V., Osadchaya E.P. Analysis of the Problem of Professional Training of Programmers and Ways to Solve It // OTO. 2014. No. 3.

[8] Yadov V.A. Social and Socio-Psychological Mechanisms of Forming Personal Social Identity // World of Russia. Sociology. Ethnology. 1995. No. 3-4.

[9] Zabara I.V. Content of Components of Value Attitude to Professional Activity among Programmers // MNKO. 2018. No. 3 (70). P. 389-390.

becomes relevant [10]. There is a need for a systematic scientific analysis of the problems of shaping values among IT specialists, both in Russia and abroad, across various social, professional, societal, and personal dimensions. The question of the social and professional development of highly qualified IT specialists in a civic sense becomes relevant, along with the investigation of the influence of various factors on the formation and alteration of their value systems. Thus, there is a necessity for a systematic scientific analysis of the issues related to the values of IT specialists, both in Russia and abroad, covering diverse social, professional, societal, and personal dimensions.

The dissertation topic, "Sociodynamics of IT Specialists' Integration in the Digital Environment (A Case Study of IT Groups in Russia, China, the USA, and Brazil)," aligns with the specialty code 5.4.4 - Social Structure, Social Institutions, and Processes. The preamble to the specialty code emphasizes the integral importance of studying contemporary processes of transforming socio-structural relations in society, various aspects of social stratification, radical changes in trends of social mobility, as well as the value orientations of individuals and groups, including models of their behavior. Section 29 underscores the significance of studying issues related to social conflicts, social tension, and manifestations of group and corporate selfishness [11]. These aspects presented in the Specialty Code 5.4.4 confirm the alignment of the research topic with the objectives of this specialty in terms of its focus and the knowledge area.

The question of enhancing the importance of analyzing both the professional and personal development of IT specialists, as well as understanding how various factors

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[10] Zabara I.V., Tverdostup K.G. The Relationship between Personal Characteristics and Emotional Burnout in Programmers with Different Value and Meaning Attitudes towards Professional Activity // MNIZh. 2020. No. 11-2 (101).

[11] Order of the Ministry of Education and Science of the Russian Federation dated October 23, 2017, No. 1027 "On the Approval of the Nomenclature of Scientific Specialties for which Academic Degrees are Conferred." Passports of specialties for research workers. Specialty code: 5.4.4. Social structure, social institutions, and processes. [Electronic resource] URL: http://www.consultant.ru/document/cons_doc_LAW_283150/ (accessed: January 12, 2020).

can impact the formation and alteration of their value systems, is becoming increasingly relevant. In the current conditions of Russia, Brazil, China, and the United States, there is a diversity observed in the demands organizations place on the necessary competencies of IT specialists, as well as in the individual attitudes and orientations of the specialists themselves.

This study aims to shed light on the differences in the sociodynamics of information technology specialists' integration within Russian society through a comparative sociological investigation, where groups of representatives from various countries are among the objects of comparison.

The **main issue of the research** lies in the existence of systemic and structural discrepancies between the professional and social priorities of IT specialists compared to the priorities of other social groups. These discrepancies are manifested in specific integration strategies adopted by IT specialists and sometimes affect the solidarity among IT specialists within Russian society. The most pronounced differences are evident in the technical, technological, organizational, educational, personal, and social spheres of interaction among IT specialists compared to other categories of Russians—users of IT technologies, in the economic incentivization of IT specialists' activities, which directly and indirectly influence their success in integration/differentiation within society.

The most relevant aspects of the socio-dynamics of value differences between IT specialists and other social groups in Russia are articulated as follows:

- *In the technical and technological aspect*: The advanced potential of technologies developed by Russian IT specialists is juxtaposed with their slow integration into the daily lives of Russians [12]. In this scenario, social values can influence not only a peculiar (simplified) framing of the techno-technological development process, limiting the breadth of technology use, but also prompt calls for

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[12] Bashkirova, V. E., Gordeeva, O. A., Voloshina, O. B. (2015). General assessment and ways to increase competitiveness in the Russian Federation. Models, Systems, Networks in Economy, Technology, Nature, and Society, 4(16), 6.

their prohibition [13]. Often, this can result in several dangerous consequences of such lag and a decline in the competitiveness of the Russian economy;

- *In the organization of activities for IT specialists and their perception of organizational culture*: In the execution of functions, IT specialists possess and are expected to manage their professional activities based on special approaches to the production process - flexible methodologies [14] (including remote work, a special work schedule, etc.). However, numerous formal and bureaucratic requirements in their work can diminish the effectiveness and quality of their activities, limiting the potential of IT specialists. For these reasons, IT specialists might often perceive outdated technologies in organizational culture and disregard them [15];

- *In terms of economic incentives,* the work of IT specialists involves a significant amount of creative labor coupled with a high level of knowledge intensity, innovation, and moving beyond conventional labor standards. Consequently, the recognition of the importance and significance of IT specialists' contributions to the success of managerial and economic activities in Russian organizations becomes challengin [16]. Additionally, by indicators of a developed information society, Russian society is nearly on par with countries having developed market economies [17], where the work of IT specialists is highly valued. In the world, the importance of highly skilled Russian IT specialists is high. Alongside this, migratory mobility is often linked

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[13] Pelewin, S. I. (2021). Value orientations of technological and technical development of society. Values and Meanings, 1(71), 92.

[14] Frolova, A. A., Zakharova, L. N. (2021). Features of organizational culture in the IT sphere. Economics and Business: Theory and Practice, 10-2, 127.

[15] Mikhailova, A. G. (2020). Acmeological approach in the formation of communicative professional readiness of future programmers. Problems of Modern Pedagogical Education, 66-1, 137-138.

[16] Bakakova, M. E., Soboleva, I. V. (2019). Personnel core of the digital economy in the light of globalization risks. Bulletin of the Institute of Economics of the Russian Academy of Sciences, 2.

[17] Bazhenov, S. V. (2015). Motivation and stimulation of labor activity in the field of information technology. MIR (Modernization. Innovation. Development), 6(4), 341–346. DOI: 10.18184/2079-4665.2015.6.4.341.346

to dissatisfaction with wages, which stands as the primary cause of the outflow of IT specialists from the country [18];

- *In ensuring the training of IT specialists,* the activities of IT professionals are associated with the development of complex software products and IT technologies, which are evolving rapidly [19]. The crucial factor in this dynamic process is the preparation of IT specialists, primarily organized independently through adopted self-training methods. Educational institutions are compelled to constantly readjust their operations; however, they do not always keep pace with the development of IT technologies [20]. In both quantitative and qualitative terms, the training of IT specialists doesn't always align with actual professional interests within the dynamics of the digital market economy;

- *In a personal sense,* in terms of socio-psychological characteristics of IT specialists: the work of IT specialists inevitably leaves a mark on their personal needs, lifestyle, and certain socio-psychological traits [21]. Some of these characteristics make it challenging to integrate into the established value systems of other professional groups [22], and successful professional work is often accompanied by personal and communication issues [23];

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[18] Boyarkin G. N., Gromova E. A. Brain Drain of Scientists and Specialists from Russia: The Current Situation // Higher Education in Russia. 2010. No.2 (86). P. 83.

[19] Babkin O. V., Varlamov A. A., Gorshunov R. A., Dos E. V., Kropachev A. V., Zuev D. O. Foreign Experience in Professional Training of Programmers // Problems of Science. 2018. No.11 (131).

[20] Klimova Y. O. Problems of Training Personnel in the Field of Information Technology // Problems of Territory Development. 2020. No.6 (110).

[21] Plotkina L. N. Socio-Psychological Analysis of Professionally Significant Characteristics of Information Technology (IT) Specialists // Proceedings of the Samara Scientific Center of the Russian Academy of Sciences. 2010. No.5-1.

[22] Naseykina L. F., Boychuk A. I. Opportunities for Implementing a Competency Approach in Forming General Cultural Competencies of Student Programmers // Education and Upbringing: Methodologies and Practice. 2013. No.4.

[23] Startseva N. N. Career-Professional Models of IT Specialists: A Sociological Aspect // Discussion. 2016. No.4 (67).

- *In the political sphere,* the priorities of IT specialists, as representatives of a distinct professional realm,[24] can be uniquely integrated with the interests of political strategies in various socio-political contexts [25], their goals, ideological platforms, and electoral programs[26], that are facilitated by IT specialists. IT specialists possess substantial potential, capable of decisively and swiftly altering the political landscape of socio-political realms [27]. Meanwhile, their professional characteristics can influence the behavior models of IT specialists in various social choice situations [28].

In summary, *the existing differences in values between IT specialists and the values of other socio-professional groups in Russian society determine the trajectories of socio-dynamics of integration/differentiation, both objectively and subjectively conditioned.* In modern conditions, these processes gain high dynamics and significant social force, particularly in understanding the relationship between globalization and regionalization. The integration of IT specialists' values into the social structure of Russian society can impact social-structural relations and intensify differentiation between those who have embraced and adopted the values of the digital society and those who remain outside this socio-technological space. Thus, exploring the field of these identified issues constitutes a pertinent task for this dissertation, which will contribute to the successful integration of IT specialists into Russian society.

The main hypothesis. Based on the study and analysis of the works of sociology classics on globalization (M. Castells) and on demassification (E. Toffler) as two leading trends in the development of post-industrial (information) societies, it is presumed that the main characteristics of values and value orientations of IT specialist

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[24] Kazaryan V. P. Ethics of Information Technology and Globalization // Bulletin of MGUL – Forest Bulletin. 2011. No.2.

[25] Miroshnichenko I.V. Models of Political Behavior of Socio-Professional Groups // South Russian Journal of Social Sciences. 2005. No. 2.

[26] Yagudin R.A. Attitudes of Professional Groups towards Big Data Technologies during the 2016 US Presidential Elections // Social and Political Sciences. 2018. No. 3.

[27] Basheva O.A. Digital Activism as a New Method of Civil Mobilization // Scientific Result. Sociology and Management. 2020. No. 1.

[28] Miroshnichenko I.V. Models of Political Behavior of Socio-Professional Groups // South Russian Journal of Social Sciences. 2005. No. 2.

groups will determine strategies for their integrative behavior and successful integration into society. In those societal systems oriented towards globalization processes, the socio-dynamics of integrating IT specialists will primarily focus on professional - instrumental and techno-technological values, which are common for all IT specialists. Conversely, in conditions of social systems oriented towards de-massification and regionalization, aimed at preserving and strengthening national characteristics, the values and value orientations of IT specialists will mainly be more focused on social values. These orientations will be reflected in the nature of values and the direction of integration, manifesting in particular directions of IT specialists' integration into the social structure of society.

Private hypotheses:

- Based on the analysis of P.A. Sorokin's integrative concept on the sociodynamics of sensory and ideational – social values, along with the considerations on professional values (E. Klimov), it is assumed to identify the unity of social and professional values among IT specialists, as the basis for integration into society. Such unity of values among IT specialists will help characterize the sociodynamics of IT group integration within the social structure of society, which may exhibit either an actively social or an actively professional nature;

- Presumably, the significance of another individual in the value system of IT specialists will be less important than the value related to technical and technological order;

- Presumably, the localization of professional values will be observed in subgroups of IT specialists differently engaged in the information production process for information reproduction purposes (D. Bell). This will be reflected both in the structure and hierarchy of professional values among IT group leaders, IT product developers, and support staff in IT companies;

- Presumably, the diversity of involvement in structural communities among IT specialists and IT groups will also be evident in the characteristics of professional values and value orientations. Depending on the group forms of association among IT

specialists, distinct values may be characterized as specific to IT communities (F. Tennis), IT organizations (A.I. Prigogine), and IT groups (G.M. Andreeva).

Degree of Development of the Topic: The issue of social and professional values and their sociodynamics in contemporary society as the basis for integration strategies has been explored by some sociologists before. Classical and modern sociology, as well as related scientific fields, have accumulated a considerable number of theories and concepts that can serve as the theoretical and methodological foundation for conducting the present dissertation research.

The attention of Russian researchers has been directed towards the system of societal values since the 1960s. The works of M. Weber [29], T. Parsons [30], F. Tennis [31], M. Rokeach [32], E. Durkheim [33], S. Thomas, and F. Znaniecki [34] explored fundamental issues in the theory of values, delving into the historical roots of the problem of values, explaining the relationship of value systems to the world, and investigating the forms and ways in which values exist. Subsequent research on values has been the focus of numerous works by distinguished Russian sociologists such as S. Aminov [35], L. Baeva [36], S. Elisha [37], D.A. Leontiev [38], A. Maslennikov [39], Pelevin, S. I. [40], S. Rakov [41], V.A.

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[29] Weber, M. Selected Works. Moscow, 1990.

[30] Parsons, T. The Structure of Social Action. Moscow, 2000.

[31] Tennis, F. Community and Society. St. Petersburg, 2002. pp. 9-11.

[32] Rokeach, M. The Nature of Human Values. Free Press, 1973, No. 5.

[33] Durkheim, E. Value Judgments and "Real Judgments" // Sociological Studies. 1991. No. 2.

[34] Thomas S., Znaniecki F. The Polish Peasant in Europe and America by William Vol. 1, part. 1. N-I. 1918.

[35] Aminov S. R. Empirical Sociological Approach to the Analysis of Values // System of Values in Modern Society. 2009. No.7.

[36] Baeva, L. V. (2011). Values as an existential choice. Values and Meanings, 6(15).

[37] Elishaev, S. O. (2011). The study of the concepts "Value" and "Value Orientations" in an interdisciplinary aspect. Values and Meanings, 2(11).

[38] Leontiev, D. A. (1996). Value as an interdisciplinary concept: the experience of multidimensional reconstruction. Questions of Philosophy, 4.

[39] Maslennikov, A. A., Volkov, V. V., Kapba, S. R. (2018). Psychological aspects of managing an educational organization in the context of integrating personal and group values. Problems of Modern Pedagogical Education, 61-1.

[40] Pelevin, S. I. (2021). Value orientations of technological and technical development of society. Values and Meanings, 1.

[41] Rakov, S. E. (2017). Universal values as a standard for designing impending social changes. Current Problems of Humanities and Natural Sciences, 7-2.

Yadov [42], E. Lebedeva [43], V.L. Tugarinov [44], and E.V. Yarina [45]. Additionally, there is significant international scientific experience in analyzing value orientations and values, presented in the scientific articles and monographs of researchers from abroad, including D. J. Allison [46], Bruun H.H. [47], Gilbert P. [48], Rankel, Charles. [49], Tomasello M. [50], Toffler A. [51], Schwartz S.H., Bilsky W. [52], Hofstede G. [53], Kadakal, R [54].

It is evident that these mentioned studies define the boundaries of their interests and, from a conceptual point of view, do not provide a clear generalization of the question of value orientations of IT specialists. In existing scientific sources, the peculiarities of the formation of social and professional values among IT industry professionals have not received sufficient explanation. However, we have utilized the principles and ideas dedicated to values and value orientations, where the object of study includes social, political, moral, and professional value orientations expressed in

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[42] Yadov, V. A. (2003). Strategy of sociological research. Description, explanation, understanding of social reality. Moscow.

[43] Lebedeva, E. A. (2016). Interrelation of goals and values. International Scientific Review, 2(12).

[44] Tugarinov, V. L. (1968). The theory of values in Marxism. Leningrad.

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[46] Allison, Derek J. Hodgkinson's Paradoxical Paradigm // Values and Ethics in Educational Administration., 2002 №1

[47] Bruun H.H. 0Science, Values and Politics in Max Weber's Methodology. Bodmin, 2007.

[48] Gilbert, P. (2003). Evolution, social roles and the differences in shame and guilt. Social Research, 70

[49] Rankel, Charles. "Social Values and Professional Values." Journal of Education for Social Work, vol. 5, no. 1, 1969

[50] Tomasello, M. (2008). The origins of human communication. Cambridge: MIT Press

[51] Toffler, Alvin. 1980. The Third Wave. New York: William Morrow

[52] Schwartz S.H., Bilsky W. Toward a theory of the universal content and structure of values: extensions and cross-cultural replications // Journal of Personality and Social Psychology, 1990, vol. 58

[53] Hofstede G. Culture's Consequences: comparing values, behaviors, institutions, and organizations across nations (2nd ed.). — Thousand Oaks, CA: SAGE Publications. 2001.

[54] Kadakal, R. Truth, Fact and Value: Recovering Normative Foundations for Sociology. Soc 50, (2013).

the works of V.V. Balyuk [55], I.V. Bormotova [56], Feldman, Ronald A.[57], Evetts J.[58], Frankel, Charles[59]. This work aims to some extent to fill the gaps in knowledge that have emerged in sociological studies of the problem.

The examination of such a specific sociological category as IT specialists has been carried out in a series of studies by Russian authors, including R.V. Antropov, K.S. Smolich, S.V. Smolich [60], N.E. Vodopyanova, M.A. Zhurina [61], O.A. Voskresenskaya [62], From the perspective of the peculiarities of consciousness and behavior, as well as social status, researchers such as I.V. Zabara [63], L.V. Zemnukhova [64], D.O. Zuev [65], S.S. Merzlyakov [66] and others have explored this category. The foundations and ideas about the peculiarities of forming socio-professional groups in

[55] Bajluk, V. V. (2015). Values of professional self-realization of personality. Pedagogical Education in Russia, 3.

[56] Bormotov, I. V. (2016). Values of the professional choice of Russian youth: a group snapshot. CISR, 3-1 (27).

[57] Feldman, Ronald A. (1973). Professional values: a cross-cultural and cross-professional comparison. International Review of Modern Sociology, 3(2).

[58] Evetts J. Short Note: The Sociology of Professional Groups: New Directions. Current Sociology. 2006;54(1)

[59] Frankel, Charles, «Social Values and Professional Values», Journal of Education for Social Work, vol. 5

[60] Antropov, R. V., Smolich, K. S., Smolich, S. V. (2014). Features of training IT specialists in the conditions of the modern global market of information technologies: reference to the experience of Germany. Bulletin of ZabGU, 10.

[61] Vodopyanova, N. E., Zhurina, M. A. (2020). Features of the value-motivational sphere of IT specialists. Bulletin of Kostroma State University. Series: Pedagogy. Psychology. Sociokinetics, 2.

[62] Voskresenskaya, O. A., Sladkova, N. M., Gorkovenko, Yu. L. (2022). Assessment of value-motivational attitudes of an employee in the field of information security. Social and Labor Studies, 1 (46).

[63] Zabara, I. V. (2019). Predictors of emotional burnout of programmers with needs-technological attitude to professional activity. Higher Education Today, 1.

[64] Zemnukhova, L. V. (2010). Workers in the field of information technology as a professional community in modern society. Petersburg Sociology Today, 2.

[65] Zuev, D. O., Kropachev, A. V., Usov, A. E. (2018). Features of the profile training and retraining of IT experts in accordance with the current needs of the labor market. Science, Education and Culture, 2 (26).

[66] Merzlyakov, S. S. (2020). Sociocultural features of Russian IT specialists. Labor Economics, 11.

Russian society have been studied by E.A. Balezina [67], S.N. Borisova [68], V.F. Gorokhov [69], I. Kasyanenko [70], Freeman, L. C[71], and others.

The theoretical and practical parts of the research are grounded in the works of authors like P. Sorokin [72], focusing on the study of integration strategies of various social groups; studies by A.I. Kravchenko [73], directed at examining the formation of network human capital; and methodological contours and concepts by S.I. Khudyakov [74], E. Kasyanova [75], and others.

In recent times, there has been a series of works dedicated to issues of social dynamics amid social transformations in different countries. Moreover, the emerging interest in this problem from foreign researchers is noteworthy. Notable works include those by N. Lawrence T. [76], Serpa, Sandro [77].

The wealth of research on the sociodynamics of values within socio-professional groups provides a solid foundation for conducting a sociological analysis of the values of IT specialists in contemporary Russia. This group is considered a unique subject of study with distinctive social characteristics, indicators, and measures reflecting key

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[67] Balezina, E. A. (2018). Risks of socio-professional groups: concept and typology. SGJ, 1 (2).

[68] Borisova, S. N. (2016). Study of professional groups in Russian sociology: main theoretical and methodological approaches. Vestnik Nizhegorodskogo Universiteta im. N. I. Lobachevskogo. Seriya: Sotsial'nye nauki, 2 (42).

[69] Gorokhov, V. F., Vasneva, N. N. (2014). On the relationship of the categories "Social community" and "Social group". Vestnik TGU, 4 (132).

[70] Kasyanenko, I., Alabin, A. (2017). "IT specialists" as a modern professional group. INTER, 14. URL: https://cyberleninka.ru/article/n/aytishniki-kak-sovremennaya-professionalnaya-gruppa (accessed: 04.07.2022).

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[73] Kravchenko, A. I. (2000). Sociology. Moscow.

[74] Khudyakov, S. I. (2009). Sociocultural dynamics: analysis of the main theories. Vestnik RUDN. Seriya: Sotsiologiya, 2, 24.

[75] Kasyanova, E. V. (2006). "Social and cultural dynamics" by P. A. Sorokin and the threat of a totalitarian society. Scientific and Technical Bulletin of Information Technologies, Mechanics and Optics, 24, 231.

[76] Nichols, Lawrence T. (2012). Sorokin as lifelong Russian Intellectual: the Enactment of an Historically Rooted Sensibility, American Sociologist, 43(4): 374-405.

[77] Serpa, Sandro, Ferreira, Carlos, Maria Santos, Ana. (2020). Digital Society and Social Dynamics. 10.14738/eb.17.2020.

societal development trends. The significance of this approach is heightened by the fact that the understanding of the value characteristics of IT specialists is largely limited to empirical data presented in various scientific and journalistic sources.

Trends in the change of value orientations among IT specialists and the nature of their integration into modern society are closely linked to the overall worldview and specific socio-demographic, economic, and cultural situations in a given country. Examining such trends will help better understand the specificity of each country and the worldview of the IT specialists living in it. The insufficient exploration of the researched issue has allowed us to select the object, subject of the study, its goals, and objectives.

The object of the dissertation research is specialists from Russian and international IT companies.

The subject of the dissertation research is the features of the sociodynamics of integration within the socio-professional group of IT specialists.

The aim of the dissertation work is to identify, study, and systematize knowledge about the sociodynamics of integration among Russian IT specialists, analyze and characterize their internal structure, hierarchy, and the peculiarities of modeling value networks. Based on this, the goal is to determine strategies for the interaction of IT specialists with various social groups and institutions, as well as their integration into the social structure of Russian society.

To achieve this goal, it is necessary to address the following **research tasks**:

1.   Study and systematize the scientific developments of Russian and foreign sociologists dedicated to the theoretical and methodological foundations of researching the specific values and value orientations of Russian IT specialists, as the basis for the sociodynamics of integration emerging in new social communities and groups in the digital space;

2.   Summarize the sociological approaches that allow examining the sociodynamics of integrating the socio-professional group of Russian IT specialists within the framework of P.A. Sorokin's ideas of social integration. Explore the trends

and peculiarities of values transformation among IT specialists in the process of information technology development and their specific influence on the social structure of society;

3.   Systematize the data on the interaction between social and professional values of IT specialists within the context of a sociological approach as the basis for the sociodynamics of integration. Based on this, analyze the structure, content, and characteristics of the value orientations of contemporary IT specialists

4.   Develop a network methodology for empirical research on the sociodynamics of socio-professional integration among IT specialists. This methodology should be based on a set of conceptual principles and approaches reflecting the specific values of IT specialists as the subject of sociological research;

5.   Conduct network research on the social and professional values of IT groups among Russian specialists and classify types of integration sociodynamics. Structure and characterize the peculiarities of value locations within subgroups such as IT company leaders, software developers, and support staff;

6.   Conduct empirical research and compare the sociodynamics of integration among Russian and foreign IT specialists. Based on this, identify the peculiarities of values among IT specialists in different social systems.

List of the author's publications:

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2.   Deryugin P.P., Bannova O.S., Kamyshina E.A., Yarmak V.E., Salfetnik K.E. Sociodynamics of Digital Capital of Students in the Conditions of the COVID-19 Epidemic Crisis: Experience of Mixed Strategy Empirical Research // Discourse. - 2021. – No. 4. – P. 45-57.

3. Deryugin P.P., Bannova O.S. Values of Students in Different Training Profiles in the Conditions of Society's Digitalization: Results of Empirical Research // Discourse. - 2022. – No. 5. – P. 68-80.

4. Deryugin P.P., Bannova O.S., Maranchak A.G. Social and Professional Group of IT Specialists: Conceptualization of Theoretical and Methodological Foundations of Research. Discourse. 2023;9(2):78-92.

5. Deryugin P.P., Miletsky V.P., Yarmak O.V., Bannova O.S., Kurazhev S.D. Social Relations of IT Specialists with Other Professional Groups: Network Modeling and Empirical Analysis Results. Discourse. 2023. Vol. 9. No. 3. P. 113-133.

6. Deryugin P.P., Yarmak O.V., Strashko E.V., Kamyshina E.A., Bannova O.S. Human Capital in Valuable Orientations of Students: Methodology, Methodology, and Diagnostic Results // SHS Web of Conferences, Social and human sciences: theory and practice, no. 1 (5), 2021, pp. 215-227.

7. Human Capital of Corporate Top Managers as a Factor of Social and Structural Relations // SHS Web of Conferences. - 2022.

8. Network modeling of entrepreneurship values (Experience of comparative analysis of entrepreneurs in Russia and China) // SHS Web of Conferences. - 2022.

9. Deriugin, P., Yarmak, O.V., Strashko, E.V., Kamyshina, E., Bannova, O.S. (2022). Integration of human and social capital: the experience of Russian, Chinese and European corporations. SHS Web of Conferences.

10. Economic efficiency justification for construction and operations of electric filling stations/ Elena Rakhmatullina, Elvira Shagiakhmetova, Olesya Bannova // E3S Web of Conferences Volume 274 (2021). 2nd International Scientific Conference on Socio-Technical Construction and Civil Engineering (STCCE - 2021). France, 2021. C. 13002.

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St. Petersburg. St. Petersburg: Publishing House of St. Petersburg Electrotechnical University "LETI", 2021. P. 144 – 146.

12. Sociological Research on Strategies of Identification Behavior in Closed-type Educational Institutions: Value Context (on the Example of Cadets of Cossack Cadet Corps) / Deryugin, P.P., Popov, R.E., Bannova, O., Kurapov, S. // X International Scientific Conference "Sociology of Religion in the Late Modern Society: Religion and Values," April 15-17, 2021, Vol. 10. P. 229-237.

13. The "Guanxi" Phenomenon as Social Capital / Deryugin, P.P., Sidorova, A.N., Popov, R.E., Bannova, O.S. // Collection of Materials of the All-Russian Conference on Natural and Human Sciences with International Participation. St. Petersburg, 2021. P. 842-844.

14. "Own World" of Values of IT Specialty Students / Deryugin, P.P., Sidorova, A.N., Popov, R.E., & Bannova, O.S. // Collection of Materials of the International Conference on Natural and Human Sciences. St. Petersburg State University, 2021. P. 889-890.

15. New History of the Post-COVID World: Markets Without Entrepreneurs and Producers? (Based on Empirical Research of Students) / Deryugin, P.P., Salfetnik, K.A., Yarmak, O., Bannova, O. // In the collection: Potemkin Readings. Collection of Materials of the V International Scientific Conference, Sevastopol, 2021. P. 12-13.

16. Formation of human capital in the digital educational environment: Russia and China - social aspects / Deryugin P.P., Bannova O.S., Kamyshina E.A., Popov R.E., Sidorova A.N., Zheng W., Yu Y. // All-Russian Scientific Conference: "Information - Communication - Society," March 18-19, 2021, St. Petersburg. St. Petersburg: Publishing House of St. Petersburg Electrotechnical University "LETI", 2021. P. 147-154.

17. Methodological foundations of measuring IT specialists' values / Deryugin P.P., Bannova O.S. // X International Scientific Conference "Sociology of Religion in Late Modern Society: Religion and Values", Belgorod, 2022. P. 35-39.

18. Migration strategies of young IT specialists / Bannova O.S., Deryugin P.P. // In the collection: Methodological Approaches and Methodical Resources for Measuring Human Capital in the Digital Society: Experience and Issues. Urban Sociology Seminar within the Kovalevsky Readings, 2021. P. 7-9.

19. Market orientations of human capital of sociology students in the digital educational environment: research results / P.P. Deryugin, S.V. Panov, K. Salfetnik, A. Salahutdinov, Y. Yu // All-Russian Scientific Conference XV Kovalevsky Readings, St. Petersburg, November 25-27, 2021

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21. Sociodynamics of digital competencies among sociology and programming students: comparative analysis of empirical research / Deryugin P.P., Bannova O.S. // In the book: Sociologist: Education and Professional Trajectories. Materials of the All-Russian Scientific Conference XV Kovalev Readings. St. Petersburg, 2021. P. 254-255.

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23. Human capital in student value orientations: methodology, technique, and diagnostic results / Deryugin P.P., Yarmak O.V., Strashko E.V., Kamyshina E.A., Bannova O.S. // Social and Human Sciences: Theory and Practice, No. 1 (5), 2021, P. 215-227.

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25.   Conversion of human and social capitals in corporations: transregional studies based on Russian, Chinese, and European corporations (part 1) / Deryugin P.P., Kremnev E.V., Yarmak O.V., Strashko E.V., Kamyshina E.A., Bannova O.S. // Modern Oriental Studies. 2021. Vol. 3. No. 4. P. 619-637.

26.   The role of education in the development of leaders' human capital / Bannova O.S., Kamyshina E.A., Deryugin P.P. // Modern Education: Content, Technologies, Quality. 2021. Vol. 1. P. 561-562.

27.   Sociodynamics of values and value orientations among employees of Russian corporations: network approach / Deryugin P.P., Bannova O.S. et al. // St. Petersburg: Publishing House of St. Petersburg Electrotechnical University "LETI", 2021, 150 p.

28.   Deryugin P.P., Miletskiy V.P., Bannova O.S., Kamyshina E.A. Social Capital in Times of Crises: Systemic Foundations of Network Measurements // Social Capital in Times of Crises: Systemic Foundations of Network Measurements. 2022. P. 88-92.

29.   Professional Values in the Era of Global Digitization / Deryugin P.P., Bannova O.S. // XVIII International Scientific and Practical Internet Conference "Youth in the Modern World: Problems and Prospects," May 20, 2022

30.   Conversion of Managerial Human Capital into Socio-Structural Relations of Corporations (Empirical Examination) / Deryugin P.P., Popov R.E., Kamyshina E.A., Bannova O.S. // "Scientific Result. Sociology and Management," 2022, p. 61-71

31.   Deryugin P.P., Bannova O.S, Yui Yan. Social-Professional Integration of IT Specialists in Light of P.A. Sorokin's Ideas on the Dynamics of Social Development (On the 300th Anniversary of St. Petersburg State University), round table collection "Consolidation of Urban Communities: Issues of Diagnostics and Regulation"

32.   Deryugin P.P., Bannova O.S. Intragroup Differentiation of IT Specialists in the Context of P.A. Sorokin's Ideas on Sociodynamics, collection of the International

Scientific Conference "Sociology of Religion in Late Modern Society: Religion and Youth"

33.   Values as the Basis for Interaction of Russian IT Specialists with Representatives of Other Social Groups (Research Concept) / Deryugin P.P., Bannova O.S. // All-Russian Scientific Conference: "Information - Communication - Society," February 2-3, 2023, St. Petersburg. St. Petersburg: Publishing House of St. Petersburg Electrotechnical University "LETI", 2023. P. 28-31.

34.   XXIII Competition of Scientific Papers in Memory of Galina Vasilievna Starovoitova "Galatea 2022" "Human in the Era of Digitization: Threats, Opportunities, Challenges", Publication: O.S. Bannova Formation of Socio-Professional Construct of Personality in the Application of Digital Technologies, 2022.

35.   Deryugin P.P, Bannova O.S., Yui Yan. Empirical Verification of the Provisions of the Integral Concept of P.A. Sorokin in Studies of IT Specialists' Values (Using the Example of IT Groups in Russia, China, Brazil, USA), collection of the All-Russian Scientific Conference XVI Kovalev Readings

36.   P.P. Deryugin, O.S. Bannova, Yui Yan, Integration of IT Specialists as a Social-Professional Group, collection of the All-Russian Scientific Conference XVI Kovalev Readings

37.   Bannova O.S., Maranchak A.G., Kurazhev S.D. Features of Professional Shift in Perceiving Values of the Digital Society among IT Specialty Students (Research Concept), in the collection: Russian Society in the Kaleidoscope of Global Transformations: Optics of Young Sociologists. Urban Sociological Seminar. St. Petersburg, 2023. P. 4-5.

The theoretical significance of this research lies in its scientific novelty and the creation of generalized conceptual representations concerning the sociodynamics of integrating IT industry employees, viewed as subjects of sociological analysis. The study applies a systematic approach to explore this issue, allowing the revelation of the influence of IT specialists' values on shaping socio-professional relationships in contemporary society

The practical significance of the empirical research results lies in applying developed scientific approaches and sociological diagnostic methods to analyze the sociodynamics of integrating IT specialists and their values. This will contribute to a deeper understanding of the processes of change not only within IT companies but also within society as a whole. Furthermore, the study's findings and conclusions will enable IT managers to more effectively manage personnel by considering the peculiarities of IT specialists' values and human capital. Additionally, within the dissertation, a proprietary methodology for the sociological diagnosis of integrating IT specialists is presented, regarded as a crucial factor influencing the formation of socio-professional relationships in modern society.

Practical recommendations stemming from this research are of considerable interest in several aspects. Firstly, they can be utilized for a deeper analysis and enhancement of socio-professional relationships within the sphere of information technology, especially within IT companies. This understanding better illuminates the factors influencing interactions among IT specialists and strategies that could be employed to improve this dynamic. Secondly, the outcomes can aid in adapting corporate culture within IT companies. Understanding the values and orientations of IT specialists can assist companies in devising more effective management strategies and implementing values that align with this professional group. The third aspect involves predicting conflict situations between IT specialists and representatives of other socio-professional groups. This predictive capability might aid in preventing or managing conflicts arising from differences in values and expectations among these groups. Lastly, the findings can be used to assess the potential of IT specialists in various countries such as Russia, the USA, China, and Brazil. This allows for a comparative analysis of values and professional potential in different cultural contexts, proving valuable in devising strategies for technology development in diverse regions.

The dissertation comprises an introduction, two chapters, seven sections, a conclusion, a bibliography, and appendices.

The main scientific findings

Throughout this study, a series of scientifically significant theoretical and practical outcomes have been attained.

1.   A methodological approach has been formulated in studying the unity of social and professional values among IT specialists, allowing for the examination of the sociodynamics of IT specialists' values within various social systems and the study of different integration strategies into the socio-professional structure. Based on such an approach, directions and typical situations of integrating IT specialists' values can be identified and characterized[78].

2.   Theoretical and methodological approaches have been systematized, enabling the characterization of Russian IT specialists as a specific socio-professional group. Moreover, these approaches reveal and explore the peculiarities of this group's values and their influence on integrative processes within society. Differences between the social group of IT specialists and other forms of their integration—social communities and social organizations—have been studied and characterized. A definition of the socio-professional group of IT specialists has been proposed, adapted to the interests of sociological research[79];

3.   Conceptual and instrumental characteristics of P.A. Sorokin's integrative concept have been researched, characterized, and presented in the form of models. These characteristics are crucial for the theoretical and empirical study and analysis of the sociodynamics of integrating IT specialists. The potential of such an approach has been demonstrated, revealing avenues for the development and supplementation of this concept with contemporary theoretical frameworks for studying the values of IT

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[78] Deryugin P.P., Bannova O.S., Maranchak A.G. Social and Professional Group of IT Specialists: Conceptualization of Theoretical and Methodological Foundations of Research. Discourse. 2023;9(2):78-92

[79] Deryugin P.P., Yarmak O.V., Strashko E.V., Kamyshina E.A., Bannova O.S. Human capital in valuable orientations of students: methodology, methodology and diagnostic results // SHS Web of Conferences, Social and human sciences : theory and practice, no. 1 (5), 2021, pp. 215-227.

specialists. It has been proven that trends in shaping the values of IT specialists amplify digital differentiation; they integrate diverse components (both sensory and ideational), scientific knowledge, and ideological positions. The correlation between the ideas of the integrative concept by P.A. Sorokin and contemporary conceptual developments in explaining the sociodynamics of values among IT specialists has been disclosed[80];

4.   Based on the analysis of various theoretical and methodological approaches, the concept of professional values of IT specialists and their place within the overall value system has been defined, highlighting their interrelation and differentiation from other values. A new typology of the subsystem of professional values has been proposed, encompassing intra-personal, external, and intermediate professional values. These values are grounded not only in the positions on work motivation but also shaped by work outcomes, human potential, human capital, and specific qualities and characteristics of IT specialists[81];

5.   Based on the conceptual principles of P.A. Sorokin's integrative theory and other theoretical-methodological foundations, a network methodology for empirical research on the sociodynamics of integrating IT specialists has been developed[82];

6.   The results of the empirical research reveal significant characteristics in the sociodynamics of values among different subgroups within the composition of Russian IT specialists. Depending on their involvement in the information production process, leaders, developers, and supporting personnel within Russian IT groups exhibit varying orientations towards social and professional values. Russian IT group leaders are mostly oriented towards social values. Developers of software products in

[80] Deryugin P.P., Miletsky V.P., Yarmak O.V., Bannova O.S., Kurazhev S.D. Social Relations of IT Specialists with Other Professional Groups: Network Modeling and Empirical Analysis Results. Discourse. 2023. Vol. 9. No. 3. Pp. 113-133

[81] Deryugin P.P., Bannova O.S. Values of students from different training profiles in the conditions of society digitalization: results of empirical research // Discourse. - 2022. – No. 5. – Pp. 68-80

[82] Deryugin P.P., Bannova O.S., Maranchak A.G. Socio-professional group of IT specialists: conceptualization of theoretical and methodological foundations of research. Discourse. 2023;9(2):78-92

Russian IT groups are focused on values of a technical and technological nature. The perception of another person as a value is most relevant for the support staff of Russian IT groups[83];

7. The results of the conducted empirical research among IT specialists from Russia, China, the USA, and Brazil reveal the peculiarities of differences in social and professional values and their influence on the sociodynamics of IT specialists' integration into the social structure of different social systems. The features of the value system among Russian IT specialists structurally and hierarchically differ from the value systems of Chinese, American, and Brazilian IT specialists[84];

Positions Presented for Defense:

1. Russian IT specialists constitute a professional group unified by a common field of activity within the information sphere. Their primary task involves generating information to sustain information circulation. IT specialists possess shared knowledge and skills within the IT sphere, fostering a collective professional culture that shapes their decision-making strategies and behaviors in the information society. It's a homogeneous group where IT specialists share similar attitudes toward economic capital and authoritative powers. They have a shared sense of identity due to the industry's specifics. Additionally, they have developed distinct social connections and relationships with other participants in the digital sphere, such as users, competitors, insiders, and others. Members of the IT specialist group display internal solidarity, competitiveness, and shared values rooted in their common interests, unique relationships, and divergent values from other social-professional groups and communities. The socio-professional group of IT specialists represents a relatively new phenomenon evolving with the establishment of the digital society. Its dynamic growth

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[83] Deryugin P.P., Bannova O.S., Kamyshina E.A., Popov R.E., Sidorova A.N. Social and professional awareness of students in engineering and technical specialties regarding the upcoming digitalization (Experience of pilot research and initial results) // Discourse. - 2021. – No. 1. – Pp. 43-56

[84] Deriugin, P., Yarmak, O.V., Strashko, E.V., Kamyshina, E., Bannova, O.S. (2022). Integration of human and social capital: the experience of Russian, Chinese and European corporations. SHS Web of Conferences.

in Russia leads to active changes in the characteristics and interactions among its members, shaping a new social dynamic in their relationships with other social-professional groups among Russians [85].

2.   Examining integrative processes among Russian IT specialists is most effective when utilizing a multi-paradigmatic approach that encompasses P.A. Sorokin's integral theory and a socio-psychological approach. This approach allows for the consideration of IT specialists' values within a broad social context, taking into account the dynamics of their development. It also explores the sociodynamics of integrating values across various domains such as economics, politics, culture, and professional activities. The theoretical framework of P.A. Sorokin's integral concept enables the examination of the integration of values among Russian IT specialists not as a linear process but as cyclic and emerging phenomena resulting from a combination of multiple social factors, recurring within socio-historical contexts. Using the integral theory of values allows for identifying specific characteristics of IT specialists' values and predicting trends in integrating their professional values in the future. This approach possesses all the relevant features for constructing empirical research methodologies [86].

3.   The values of IT specialists represent fundamental elements shaping new professional relationships in the digital society. Examining these values involves numerous approaches and aspects, requiring a multidisciplinary and multifaceted approach. Professional values can be analyzed considering their essence, characteristics, temporal parameters, elements of measurement systems, activity structures, as well as within scientific categories and developmental directions. In the context of IT specialists, professional values arise through interactions within the social environment and are assessed based on their importance and value to society, social

[85] Deryugin, P. P., Bannova, O. S., Maranchak, A. G. (2023). Social-professional group of IT specialists: conceptualization of the theoretical and methodological foundations of research. Discourse, 9(2), 78-92.

[86] Deryugin, P. P., Miletskiy, V. P., Yarmak, O. V., Bannova, O. S., Kurazhev, S. D. (2023). Social relations of IT specialists with other professional groups: network modeling and results of empirical analysis. Discourse, 9(3), 113-133.

groups, or individuals. They evolve through the selection process among alternatives and can encompass diverse characteristics. Their evolution within various social trends, such as societal integration and demassification, constitutes an important aspect. Different social conditions and factors, like status within social communities, the correlation between professional and social values, and the level of involvement in information production, significantly influence the system of professional values among IT specialists [87].

4.   The network methodology of empirical research into the sociodynamics of integrating IT specialists involves identifying characteristics of group integration as the main criterion for analysis. The IT sphere of activity, the level of professional competence, the extent of official employment, participation in project activities, age, gender characteristics, competence in software use, interaction with clients and other participants, role in the production process, and the degree of immersion in the digital sphere are key factors. In this regard, firstly, it's expedient to classify professional values of IT specialists based on their degree of direct involvement in the information production process. It's crucial to highlight distinct status-role positions: 1. managers who organize and supervise IT specialists' work; 2. actual IT developers - programmers and designers; 3. support staff - company employees interacting with IT specialists, engaged in ancillary and supportive activities in IT companies ("IT support"), whose professional values exhibit significant differences. Secondly, within the system of professional values among IT specialists, managers, developers, and support staff, it's necessary to identify the core of the values system and its periphery [88][89];

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[87] Deryugin, P. P., Bannova, O. S. (2022). Values of students in various fields of study in the conditions of society digitization: results of empirical research. Discourse, (5), 68-80

[88] Deryugin, P. P., Bannova, O. S., Yui Yan. (Year). Social-professional integration of IT specialists in the light of P. A. Sorokin's ideas about the dynamics of social development. In the collection of the round table "Consolidation of urban communities: problems of diagnosis and regulation" on the occasion of the 300th anniversary of St. Petersburg State University.

[89] Deryugin, P. P., Yarmak, O. V., Strashko, E. V., Kamyshina, E. A., Bannova, O. S. (2021). Human capital in valuable orientations of students: methodology, methodology, and diagnostic results. SHS Web of Conferences, Social and human sciences: theory and practice, 1(5), 215-227.

5.   Examining the sociodynamics of integrating the social-professional group of Russian IT specialists based on their professional values has several peculiarities that allow documenting specific characteristics of this social-professional group[90]. The main characteristics of the system of professional values among Russian IT specialists include: 1. the decisive role of digital competencies, constituting the core of IT group values; 2. the significant role of scientific and ideological values accompanying the reinforcement of the core values - digital competencies; 3. varying significance in the understanding of sensory and ideational values (P.A. Sorokin); 4. significant differences in perceiving the role of another person as a value among the views of leaders, developers, and support staff of IT groups. The empirical research identified the following main features of IT specialists' subgroups: 1. The professional values of leaders are most integrated within their subgroup, representing the most cohesive subgroup based on the cohesion of values; 2. The subsystem of professional values among IT developers appeared least connected. Technical and technological values were most important for this subgroup, followed by scientific values, while ideational values were least integrated with other values in this subsystem. 3. The professional values of IT support staff, according to several indicators, occupy an intermediate position between the characteristics of the values subsystems of IT group leaders and IT developers. For support staff, the most significant aspect is their relation to other people as a value, more so than for IT developers and IT company leaders [91].

6.   The value system of Russian IT specialists differs from that of IT specialists in other countries. Comparison of values among Russian IT specialists with their counterparts from China, the USA, and Brazil revealed particularities and future trends. In comparison with other countries, the professional value system of Russian IT specialists can be characterized as established. Central values for them encompass

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[90] Deryugin P.P., Bannova O.S., Kamyshina E.A., Popov R.E., Sidorova A.N. Social and Professional Awareness of Engineering Students Regarding the Upcoming Digitalization (Pilot Study Experience and Initial Results) // Discourse. - 2021. – No. 1. – P. 43-56

[91] Deryugin, P. P., Bannova, O. S., Kamyshina, E. A., Yarmak, V. E., Salfetnik, K. E. (2021). Sociodynamics of digital capital of students in the conditions of the epidemiological crisis COVID-19: the experience of a mixed strategy of empirical research. Discourse, (4), 45-57.

digital and technical-technological values. Among Chinese IT specialists, professional values take on a distinctive form. Scientific and ideological values hold substantial significance for them. The value system of American IT specialists reflects the idea of organic solidarity, where relationships among actors are more formalized and hierarchically defined, and interactions occur through clear formal duties. Brazilian IT specialists, in turn, stand out due to their hypertrophied prioritization of digital values[92].

7.   The methodological approach in research has identified two directions of sociodynamics in the integration of IT specialists, characterized as: a) prioritizing the social component in the formation of professional values, where values harmoniously integrate with societal values. In such cases, one can refer to it as a socio-harmonious integration direction; b) prioritizing professional values in forming a common network of values, i.e., connections and relationships arising primarily from professional activity interests. In this case, it can be described as a one-dimensional—professional integration. At the intersection of these integration directions, four strategies of sociodynamics in integrating IT specialists emerge: 1. Socially universal strategies of IT specialist integration, oriented toward multiple social development directions, considering the interests of various social actors; 2. Social-imitative or quasi-social strategies of IT specialist integration, similar in structure to socially universal but prioritizing utilitarian professional values; 3. Professionally universal integration strategy, focused on broad implementation of professional digital technologies and values in various aspects. 4. Quasi-professional, professionally imitative integration strategies appear externally similar to the professionally universal type of IT specialist

[92] Deriugin, P., Yarmak, O. V., Strashko, E. V., Kamyshina, E., Bannova, O. S. (2022). Integration of human and social capital: the experience of Russian, Chinese and European corporations. SHS Web of Conferences.

integration, where professional values hold a dominant position while other values play a less significant role [93][94].

The propositions presented for defense are supported by information from relevant chapters and paragraphs.

The scientific reliability of the obtained results is reinforced through comparison with data from current research conducted within the theoretical and empirical components of this dissertation. Various methodological approaches have been employed, including quantitative and qualitative methods, as well as data triangulation. The significance of the research findings is affirmed by their alignment with the results of other scholars' studies. Additionally, this validation is evidenced by the presentation of scientific contributions at conferences, in collective monographs, articles, including peer-reviewed publications.

The results and conclusions of this research have been validated by the author through scientific publications, discussions at academic conferences and seminars, and presentations at the meetings of the Department of Sociology and Political Science at St. Petersburg State Electrotechnical University "LETI." They were also presented during practical sessions as part of the supervising mentor's teaching activities and in the practical work of the applicant.

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[93] Deryugin, P. P., Bannova, O. S., Yui Yan. (Year not provided). Empirical testing of the provisions of the integral concept of P.A. Sorokin in the study of the values of IT specialists (on the example of IT groups in Russia, China, Brazil, the USA). In the collection of the All-Russian scientific conference "XVI Kovalevskie readings."

[94] Deryugin, P. P., Bannova, O. S., Maranchak, A. G. (2023). Social-professional group of IT specialists: conceptualization of the theoretical and methodological foundations of the study. Discourse, 9(2), 78-92.

Chapter 1 Theoretical and Methodological Analysis of the Sociodynamics of Socio-Professional Integration of IT Specialists as a Subject of Sociological Study

The values of IT specialists, as representatives of a specific socio-professional group, have been the subject of numerous sociological studies [95]. Analyzing these values often leads to conclusions about the changes within Russian society as a whole, alterations in its social structure and institutions, and assessments of its past and present states [96]. At this historical stage, IT specialists represent a new socio-professional group, and their values introduce a distinct modality into the trends of social development. The emergence of new norms and value models among IT specialists is primarily rooted in the characteristics of their professional sphere Their work involves analyzing big data, digital transformation, and utilizing machine learning and artificial intelligence tools, which lead to radical changes in production processes. These changes increase production volume, enhance labor productivity, and optimize economic costs [97]. These distinct features of their professional activities inevitably influence various social characteristics, allowing us to consider IT specialists as a unique socio-professional group [98]. The collective efforts of this socio-professional group contribute to shaping the digital space, which in turn reflects on the state of all

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[95] Merzlyakov S.S. Socio-cultural features of Russian IT specialists // Labor Economics. 2020. No. 11; Djanyan S.T., Zabara I.V. Features of emotional burnout among programmers with different types of value-meaning attitude to professional activities // Pedagogy and Enlightenment. 2019. No. 2; Mikhailina S.A. Freedom of information in the global world and the ethos of the programmer community // ESGI. 2014. No. 3-4 (3-4); Zabara I.V. Predictors of emotional burnout among programmers with a need-technological attitude to professional activities // Higher Education Today. 2019. No. 1; Titova V.O. Development of social competencies and values of master's students in digital humanities through project practice organization model // Humanitarian Informatics. 2018. No. 1; Kruglik V.S., Osadchiy V.V. Formation of programming competence in future engineer-programmers // ITS. 2019. No. 4 (97).

[96] Elishev S.O. Study of the concepts "Value", "Value orientations" in an interdisciplinary aspect // Values and Meanings. 2011. No. 2 (11). P. 82.

[97] Economic efficiency justification for construction and operations of electric filling stations/ Elena Rakhmatullina, Elvira Shagiakhmetova, Olesya Bannova // E3S Web of Conferences Volume 274 (2021). 2nd International Scientific Conference on Socio-Technical Construction and Civil Engineering (STCCE - 2021). France, 2021. C. 13002.

[98] Toschenko I.Zh. Structure and characteristics of the social-professional group of top managers // Bulletin of RSUH. Series "Philosophy. Sociology. Art Studies". 2012. No. 2 (82).

other public systems and the social structure at large [99][100]. Examining the values of this emerging socio-professional group of IT specialists enables a more accurate forecast of the prospects for social development [101][102] and trends [103] in the formation of society, both regionally and globally[104][105][106], within the digital space [107].

This chapter involves a step-by-step solution to several relevant scientific tasks:

- Identifying and characterizing the forms of integration and association among IT specialists as a new specific socio-professional group;

- Systematically presenting the integration of values among IT specialists as the subject of sociological research and exploring their sociodynamics;

- Identifying and describing the specific features of values held by IT specialists in different social communities (Russia, China, USA, Brazil).

1.1 The Sociodynamics of Integration within the Social-Professional Group of Russian IT Specialists: Fundamental Tenets of Sociological Scienc

For sociology, it is crucial to understand the nature and forms of integration among IT specialists as one of the types of social associations. Analyzing this is significant as the interpretation and substantive characteristics of this community

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[99] Miroshnichenko I.V. Models of Political Behavior of Socio-Professional Groups // South Russian Journal of Social Sciences. 2005. No. 2.

[100] Yastrebov G.A. Reproduction of Socio-Professional Groups in Modern Russia // World of Russia. Sociology. Ethnology. 2009. No. 2.

[101] Balezina E.A. Risks of Socio-Professional Groups: Concept and Typology // SGH. 2018. No. 1 (2).

[102] Mishchenko A.S. "Innovators" as a Special Socio-Professional Group in Modern Russia // Petersburg Sociology Today. 2016. No. 7.

[103] Deminskaya V.E. Line Managers as a Socio-Professional Group // Bulletin of St. Petersburg University. Sociology. 2020. No. 3.

[104] Ponomarev V.A. Transformation of Social Structure in Modern Russia // Humanities and Social Sciences. 2007. No. 6. P. 74-75.

[105] Avraamova E., Loginov D. Perception of Economic Changes by Socio-Professional Groups of the Population // Economic Development of Russia. 2017. No. 3.

[106] Kuznetsova D.S. Economic Profile Specialists as a Socio-Professional Group // Bulletin of Eurasian Science. 2015. No. 2 (27).

[107] Antropov R.V., Smolich K.S., Smolich S.V. Features of IT Specialist Training in the Conditions of the Modern Global Information Technology Market: Experience of Germany // Bulletin of ZabGU. 2014. No. 10.

subsequently guide all other elements of the strategy in their theoretical and empirical research. It's particularly important to establish in what capacity IT specialists appear as a "professional community" or "professional group" as a real social phenomenon.

In our opinion, IT specialists represent a social-professional group. On the one hand, the union of these individuals carries a common social attribute—this group emerges at a distinct stage in the society's development, marking the inception of the formation of the digital social space. On the other hand, the entirety of IT specialists is linked to information, IT technologies, and IT equipment, which, for these professionals, serve as objects of professional activity, with a crucial attribute being that they view and use them as a source of existence—this constitutes their labor, for which they earn income [108].

According to A.S. Mishchenko's research [109], there are several key theoretical approaches to analyzing socio-professional groups that can be considered from different sociological perspectives. One of these approaches is the stratification concept, which views socio-professional associations as factors and consequences of social division and hierarchy in society (V.V. Radaev, O.I. Shkaratan) [110]. Another is the functionalist approach, which analyzes socio-professional groups in terms of their activities and functions performed (O.I. Shkaratan) [111]. he attributive approach involves identifying professional characteristics and qualities that define the specifics of socio-professional associations; this approach is mainly used by foreign sociologists (W. Goode, R. Dingwall, P. Lewis) [112], [113]. The activity-activist concept evaluates the totality of central aspects of professional activity and their empirical analysis (V.A.

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[108] Profession. https://ru.wikipedia.org/wiki/Профессия (Accessed on: 23.08.2022).

[109] Mishchenko A.S. "Innovators" as a special socio-professional group in modern Russia // Petersburg Sociology Today. 2016. No.7. Pp. 319-349.

[110] Radaev V.V., Shkaratan O.I. Social Stratification. Moscow: Aspect-Press, 1996.

[111] Shkaratan O.I. Socioeconomic Position and Behavior of Professionals and Managers in Employment. Preprint WP1/2006/03. Series WP1 (Institutional Problems of the Russian Economy). Moscow: HSE, 2006.

[112] Goode W. Community Within a Community: the Professions // Socio logical Perspectives on Occupations. Illinois: F. E. Peacock Publishers, 1972. P. 194—200.

[113] Dingwall R., Lewis P. Introduction // Dingwall R., Lewis P. (eds) The So ciology of the Professions: Lawyers, Doctors and Others. London: Macmillan, 1983.

Mansurov, O.V. Yurchenko) [114]. The resource concept focuses on analyzing the social status of socio-professional groups and their possession of certain capital-resources according to P. Bourdieu (N.E. Tikhonova) [115][116]. The socio-psychological approach explores the influence of social and personal conditions, factors, and formations, such as work activity features, group development, professional and labor values, and work motivation (A.G. Zdravomyslov, N.I. Lapin, V.A. Yadov) [117], [118].

Each of these conceptual approaches has its merits and drawbacks, and it's advisable to use them depending on the research objectives. In this particular case, the socio-psychological approach to studying IT specialists was deemed most relevant, as investigating the values of such professionals implies considering these values as the primary object of research, encompassing both personal and social phenomena [119]. One of the significant arguments in favor of this approach is its development and substantiation within domestic sociology. Specifically, V.A. Mansurov and O.V. Yurchenko note that Western sociology lacks sufficient attention to the analysis of socio-psychological characteristics of individual professionals. Instead, many Soviet-Russian studies focus on internal aspects of professional groups, such as the complexity of work, its creative nature, and the essence of calling. Special attention is paid to

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[114] Mansurov, V. A., Yurchenko, O. V. "Sociology of Professions: Formation of the Discipline and Prospects for its Development" in "Professional Groups: Dynamics and Transformation." Moscow, 2008. Pp. 16–36.

[115] "Formation of Human Capital in the Digital Educational Environment: Russia and China - Social Aspects" by Deryugin, P. P., Bannova, O. S., Kamyshina, E. A., Popov, R. E., Sidorova, A. N., Zheng, W., Yui Yan in the All-Russian Scientific Conference: "Information – Communication – Society," March 18–19, 2021, St. Petersburg. St. Petersburg: Publishing House of SPbGETU "LETI," 2021. Pp. 147-154.

[116] Tikhonova, N. E. "Resource Approach as a New Theoretical Paradigm in Stratification Studies" in "Sociological Research." 2006. No. 9. Pp. 28–40.

[117] Zdravomyslov, A. G., Yadov, V. A. "Man and His Work in the USSR and After." Moscow: Aspect-Press, 2003.

[118] Lapin, N. I. "Theory and Practice of Innovation." Moscow, 2008.

[119] XXIII Competition of Scientific Works in Memory of Galina Vasilyevna Starovoitova "Galatea 2022" Publication: O. S. Bannova "Formation of the Socio-Professional Construct of Personality in the Conditions of Applying Digital Technologies," 2022.

professionals as individual personalities, their motivation, attitude towards work, level of responsibility, discipline, and initiative [Zdravomyslov, Yadov 2003] [120].

To a considerable extent, especially in conducting the empirical part of the research, we have utilized ideas and propositions from other concepts—stratification, functionalist, and activity-based. That is, a collection of ideas integrated into a multi-paradigmatic approach. According to V.A. Yadov, multi-paradigmality in contemporary sociology represents a systematic understanding of the relationships between different theories, including: (a) recognition of a general philosophical ("metaphysical") conception of the social world that answers the question about the essence of the "social"; (b) common principles and criteria for the validity and reliability of knowledge about social processes and phenomena; (c) defining a common set of problems that may or may not be investigated within a given paradigm [121]. Moreover, diverse theoretical approaches enable the analysis of the degree of autonomy and authority of professionals, as well as the nature of their relationships [122]. Specifically, the principles and methodological foundations of these presented concepts were actively employed in shaping the research design and methodologies.

he multi-paradigmatic approach can also be seen as a platform facilitating the integration of the advantages of macro-sociological and micro-sociological analyses in studying IT specialists as a distinct professional group. Macro-sociological analysis allows for examining this professional group in terms of the conditions and factors leading to its emergence, identifying its primary features and characteristics, as well as its social interactions with other professional groups [123]. At the same time, it's worth emphasizing that micro-sociological analysis possesses its own advantages, which

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[120] Mansurov, V. A., Yurchenko, O. V. "Sociology of Professional Groups: History of Formation and Perspectives" // Bulletin of the Institute of Sociology. 2013. No. 7. Pp. 101-102.

[121] Yadov, V. A. "Possibilities of Combining Theoretical Paradigms in Sociology." P. 6. // Sociological Journal. 2003. No. 3. Pp. 5-20.

[122] Mansurov, V. A., Yurchenko, O. V. "Sociology of Professional Groups: History of Formation and Perspectives" // Bulletin of the Institute of Sociology. 2013. No. 7. P. 101.

[123] Borisova, S. N. "Study of Professional Groups in Russian Sociology: Key Theoretical and Methodological Approaches" // Bulletin of Lobachevsky University of Nizhny Novgorod. Series: Social Sciences. 2016. No. 2 (42). Pp. 147.

prove essential for empirical research, particularly for analyzing intra-group professional interactions among IT specialists, thereby complementing the overall understanding of their activities.

The research aimed at analyzing the values of IT specialists primarily sought to identify the nature and forms of their social integration, specifically to determine whether they constitute a social-professional group or a social-professional community. The determination of whether IT specialists are a group or a community remains an open question and becomes a subject of extensive debate. This question presents a significant topic for sociological research, especially in the context of the typological and hierarchical structures emerging in modern digital society [124]. The evolution of perceptions regarding social communities and groups requires continuous scholarly adjustments in defining these categories. For instance, discussing the concept of a 'social group,' S.S. Frolov emphasizes that despite being considered a key concept in sociology, there is no complete consensus among scholars regarding its precise definition [125].

It is worth noting that the issue of uncertainty surrounding these mentioned categories is not limited to domestic theoretical science; it is also pertinent among foreign sociologists. In the Great Explanatory Sociological Dictionary (COLLINS), it is emphasized that the term 'community' is widely applied in various contexts, and this diverse spectrum of usage makes it one of the most complex and debated concepts. Nonetheless, this does not diminish its importance and relevance in sociology [126].

This problem is further complicated by the fact that in studies dedicated to IT specialists, authors actively utilize both of these categories, considering them interchangeable. For instance, L.V. Zemnukhova [127], examines the integration of IT

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[124] Mm, Mm. (2012). A Hierarchical Model of ICT in Digital Society to Access Information. Canadian Journal on Electrical and Electronics Engineering. 3. 366-374.

[125] Frolov, S. S. Sociology. Moscow, 2011. P. 192.

[126] Great Explanatory Sociological Dictionary (COLLINS): in 2 volumes. Moscow, 1999. Vol. 1. P. 511.

[127] Zemnukhova L.V. "Workers in the Information Technology Sector as a Professional Community in Modern Society," Petersburg Sociology Today, 2010, No. 2. "IT Workers in the Labor

specialists as a 'social community,' while I. Kasyanenko and A. Alabin define IT specialists as a 'social group' [128]. Another approach involves equating 'social community' and 'social group' as equivalent categories, as done by A.A. and K.A. Radugin [129]. The authors of the article 'Professional Social Groups' also adhere to this position, defining 'social community' through the concept of a 'group.' They assert that social-professional communities are large professional groups of people that occupy a specific place in the system of social division of labor, such as workers, office workers, intellectuals, peasants, entrepreneurs [130]. G.B. Korableva views social community and social group as interconnected structures, indicating that social groups are part of the social community [131]. These examples confirm the relevance of theoretical analysis of the stated topic and the importance of substantiating and operationalizing the concept of the social-professional group of IT specialists.

In examining this issue, it is crucial to refer to the research of V.F. Gorokhov and N.N. Vasneva, who extensively demonstrate that the concepts of 'social community' and 'social group' are autonomous and indivisible sociological categories, not reducible to each other and not interchangeable [132]. Based on an analysis of the main ideas from the works of foreign and Russian sociologists like F. Tönnies, J. Schumpeter, R. Merton, K. Mannheim, T.M. Mills, P.A. Sorokin, V.A. Yadov, and others, researchers identify substantial differences in understanding 'community' and 'group' as a result of the particular characteristics of these forms of social integration.

Market," Sociology of Science and Technology, 2013, No. 4, p. 77. "Formation of a Professional Community of Information Technology Workers (using the example of St. Petersburg)," Abstract of the Candidate of Sociology dissertation, St. Petersburg, 2013, p. 4.

[128] Kasyanenko I., Alabin A. "IT specialists" as a modern professional group // INTER. 2017. No.14. URL: https://cyberleninka.ru/article/n/aytishniki-kak-sovremennaya-professionalnaya-gruppa (accessed: 04.07.2022).

[129] Radugin A.A., Radugin K.A. Sociology. Moscow, 2006.

[130] Professional Social Groups. https://studwood.net/620946/sotsiologiya/professionalnye_sotsialnye_gruppy (accessed: 09.07.2022)

[131] Korableva G. B. Institutional Foundations of Forming Professional Communities // Bulletin of Urals State University. Series: Social Sciences. 2006. No.2 (57). P. 126.

[132] Gorokhov V.F., Vasneva N. N. On the Relationship between "Social Community" and "Social Group" Categories // Bulletin of Tomsk State University. 2014. No.4 (132). P. 17.

The primary differences between social communities and social groups can be summarized as follows.

In regards to 'social communities,' their fundamental characteristic is the natural and organic nature of their origin and development. These essential differences were emphasized in Ferdinand Tönnies' seminal work 'Gemeinschaft und Gesellschaft' (Community and Society). Tönnies highlighted that the concept of 'community' represents a stable and real 'living and organic entity,' within which we exist with our close ones, experiencing together all the hardships and joys from the moment of birth. Tönnies saw in community a living interaction among people. He juxtaposed community with the 'mechanical,' 'abstract,' and 'public' world, depicting it as the sphere of businessmen, passersby, scholars, trading companies, and other rational forms of societal organization [133]. Community is a notion encompassing all associations of people where a certain social bond exists and is maintained, even if this phenomenon is limited in time. According to Jan Szczepański, a Polish sociologist, this is a comprehensive concept, embracing all enduring forms of shared life and presenting the most general definition [134].

Russian sociologists also share similar views on the concept of "social community." For them, community plays a key role in sociology as it represents a fundamental notion embodying the object of sociological study - the "emerging commonality" that arises based on similar conditions of existence and activity, extending even to similarities in spiritual life (according to V.A. Yadov) [135]. The concept of "social community" encompasses a wide range of social actions and interactions, including solidarity in expectations to achieve common goals and solve tasks (according to A.G. Efendiev) [136]. Social community serves as a kind of bridge between the individual and society as a whole, and it specifies society through specific

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[133] Tennis F. "Community and Society". St. Petersburg, 2002. Pp. 9-11.
[134] Shepansky Ya. "Elementary Notions of Sociology". Moscow, 1969. P. 117.
[135] Yadov V.A. "Strategy of Sociological Research. Description, Explanation, Understanding of Social Reality". Moscow, 2003. P. 12.
[136] General Sociology, edited by A.G. Efendiev. Moscow, 2005. Pp. 276-277.

groups of people such as family, work or study collectives, relatives, circles of friends, interest groups, sports teams, and many others, including territorial, ethnic, and religious communities (according to G.E. Zborovsky) [137]. The significant characteristic of "social community" lies in its concrete manifestation in the real world, leading to objective solidarity among individuals. In this case, individuals come together not so much by their own will but due to external factors such as belonging to a specific territorial community, ethnic group, and so forth [138].

On the contrary, social groups, their nature of emergence and functioning, possess a subjective and volitional aspect On the contrary, social groups, their nature of emergence and functioning, possess a subjective and volitional aspect [139]. Social groups have their unique characteristics and the ability for collective thoughts, feelings, and actions, which can significantly differ from individual positions and behaviors of group members. These differences have been studied by numerous authors, including renowned sociologists such as Emile Durkheim, Georg Simmel, Ludwig Gumplowicz, Pitirim Sorokin, Karl Mannheim, Robert Merton, Charles Cooley, Neil Smelser, Randall Collins, J. L. Moreno, Charles R. Mills, among others. For instance, Emile Durkheim emphasized that a group thinks, feels, and acts entirely differently than its individual members would if they were separate [140]. Thus, social groups have their specificity and can create synergistic effects that couldn't arise from individual actions alone. Ludwig Gumplowicz highlights the significant importance of group movements and collective efforts in the functioning of society. This reflects the fundamental principles of social dynamics, indicating that society is not only formed from individual individuals but also significantly depends on the interactions and movements of social

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[137] Zborovsky G.E. The Theoretical Foundations of Studying Social Community. Socis. 2010. No. 4. Pp. 3-12.

[138] Gorokhov V.F., Vasneva N.N. On the Relationship between the Categories "Social Community" and "Social Group". Bulletin of TGU. 2014. No. 4 (132). P. 17.

[139] Freeman, L. C. The sociological concept of group: An empirical test of two models. Am. J. Sociol. 98, 152–166 (1992).

[140] Durkheim, E. The Division of Labor in Society. The Method of Sociology. Moscow, 1990. P. 494.

groups [141]. Pitirim Sorokin asserted that society's life is largely determined by the life of its social groups. He regarded social groups as fundamental elements of society in which people interact with each other and influence one another. For him, the concepts of 'social group' and 'society' were closely related and largely interdependent, considering them as synonyms [142]. Karl Mannheim also attached great importance to the role of social groups in shaping societal processes. He believed that society is formed through the interaction of various groups, each having its own interests and aspirations. Social consciousness, in his view, is built on collective beliefs and values that are characteristic of each social group. These groups have their own 'reflected self,' meaning a specific representation of their role and position in society. Mannheim also emphasized that during social changes, groups strive to define their new position and influence societal processes [143].

Significant attention to the study of social groups among Russian sociologists has been devoted to S.S. Frolov, V.I. Dobrenkov, Yu.G. Volkov, A.I. Kravchenko, and others. 'According to A.I. Kravchenko,' a social group is commonly understood as any assembly of people distinguished by specially significant criteria [144].

Various social-psychological processes are characterized differently in communities and groups. Some characteristics of such processes are provided in Appendix 1.

As evident, the characteristics of groups highlight the specifics of social processes within them, describing them as more active and significant compared to processes within communities. These specifics are documented in scientific publications. Furthermore, the scientific community has affirmed certain trends in the sociodynamics of groups and communities, related to other aspects of their internal and external environment. In the course of the study, we also used the 'Bukvarix' service to

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[141] Gumplovich, L. Foundations of Sociology // Western European Sociology of the 19th – early 20th centuries: Texts. Moscow, 1996. P. 36.

[142] Sorokin, P.A. Popular Textbook of Sociology. Moscow, 1994. P. 12.

[143] Mannheim, K. Selected Works: Sociology of Culture. Moscow; Saint Petersburg, 2000. P. 95.

[144] Kravchenko, A.I. Sociology. Moscow, 2000. P. 192.

analyze the frequency of pairs of concepts such as 'group-values,' 'community-values,' and conducted similar procedures for concepts like 'attribute,' 'common goal,' and 'professional.' The results of this procedure are presented in Table No. 1.1.1.

Table No. 1.1.1. Frequency of usage of concept pairs in scientific publications.

	Keyword 1	Keyword 2	Frequency of Mutual Usage
1	Group	Values	7721
	Community	Values	3172
2	Group	Attribute	129299
	Community	Attribute	15651
3	Group	Common goal	9887
	Community	Common goal	1161
4	Group	Professional	38659
	Community	Professional	3228

The statistical data indicates a more frequent usage of the term "social group" compared to "social community" in the context of describing integration processes. This suggests that the concept of "group" is more relevant for contemporary research. The analysis also confirms a strong correlation between the concept of "group" and categories such as "values," "common goal," and "professional." Specifically, the term pair "group-attribute" is used much more often than "community-attribute." This fact highlights that in the context of describing groups as a distinct form of unity and integration, the presence of common and distinctive attributes is considered a central aspect. In other words, the scientific understanding of a group implies that the objects of study should possess specific common attributes, conditions, or characteristics that allow their classification within a certain class of phenomena or phenomena.

The concept of "social group" is more closely associated with values compared to the notions of "social communities" [145]. From the provided data, it's evident that the linkage between the terms "group-values" occurs more frequently than the linkage between "community-values." This conclusion is substantiated as individuals' values

[145] Helkama K. Recherches recentes sur les valeurs // J.–LBeauvois, N.Dubois, W.Doise. La construction sociale de la personne. Grenoble, 1999, p. 61–75.

within a group play a vital role in its formation and solidarity, where similarity in values is considered a key factor for successful group functioning [146]. In this context, it can be assumed that groups actively establish shared values more than communities. Unified values within groups act as the foundation for numerous other social connections and influence dependencies within the group. This is particularly crucial for small groups, where values might account for up to 60% of the variability in mutual choices and rejections [147].

This notion extends to professional groups where the coherence of values, including professional values, is deemed critical for the group's successful functioning. Many researchers attribute significant importance to group values in analyzing professional groups. For instance, E.D. Telmanova underscores the importance of group values among craftsman-entrepreneurs, describing them as a pivotal category. According to her, adherence to these values enables members of the professional group to achieve professional success and derive satisfaction from their work. These values might be rooted, for example, in the concept of "sociality," signifying an individual's belongingness to a real social group and informal communication [148]. T.A. Terekhova, E.L. Trofimova, and G.P. Geranyushkin also express a similar perspective regarding values and value orientations of managers. They describe the values of a professional group as pertaining to "higher-level" indicators, playing a crucial role in regulating the behavior of members within the professional group. These values become motives for selecting and socially valuing professional activities and are linked to realized

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[146] Kaptsov, A. V., Karpushina, L. V. "Community of Values as a Criterion for Forming Groups for Staff Training." Journal: Organizatsiya i Normirovanie Truda (Organization and Labor Regulation). 2010. Issue 3 (88). Page 141

[147] Kaptsov, A. V., Prokofieva, T. A. "Interpersonal Relationships as a Factor in Changing Students' Personal Qualities." Book chapter in "Psychology and Contemporary Russian Education: Materials of the IV All-Russian Congress of Educational Psychologists in Russia." Publisher: FPO Russia, Moscow. 2008. Pages 316-318. ISBN 978-5-9900872-6-2.

[148] Telmanova, E. D. "Value Orientations of an Entrepreneur-Craftsman as a Pedagogical Problem." Journal: Obrazovanie i Nauka (Education and Science). 2011. Issue 8. Pages 50-51.

scenarios of economic behavior [149]. I. Bormotov draws a similar conclusion in his study of youth social groups. He notes that the value choices of youth at the group level not only complement the overall picture of values in Russian society but also provide important directions for future scientific research. This underscores the importance of understanding values at the group level and their influence on societal processes and events [150]. From the presented data, it can be affirmed that the category of professional values plays a central role both in the content and in the frequency characteristics of analytical materials. This confirms its significance in analyzing the social nature of professional groups and their influence on societal processes.

Research by A.A. Maslennikov, V.V. Volkov, and S.R. Kapba underscores the universal significance of values in shaping social groups and elucidates it as follows: groups built on shared values more often exhibit stability and promise. The authors indicate that unlike motives and interests, values do not necessarily lead to conflicts. People may have different goals and beliefs yet share common values or have intersecting values. Even if they lack common values entirely, the situation can be altered. When corporate values align or intersect with the values of individual employees, it creates a conducive environment for effective work. This enhances employee motivation, increases their dedication to their work, generates interest in it, strengthens their responsibility, and helps develop self-regulation skills. Focusing on teamwork also allows each employee to feel the significance of their contribution to the business and enables them to express their individuality within the team [151].

It can be argued that some values are more prevalent and popular, indicating that they are more likely to resonate with employees and intersect with their value systems

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[149] Terekhova, T. A., Trofimova, E. L., Geranyushkina, G. P. "Research on the Values of Entrepreneurs from Different Socio-Demographic Groups." Journal: Izvestiya of Irkutsk State University. Series: Psychology. 2020. Issue [No specified]. Page 71.

[150] Bormotov, I. V. "Value Choices of Russian Youth: Group Snapshot." Journal: Social History. Modernity. Modern Issues. 2016. Issue 3-1 (27). Page 131.

[151] Kamyshina, E. A., Deryugin, P. P., Bannova, O. S. "The Role of Education in the Development of Human Capital among Leaders." Journal: Modern Education: Content, Technologies, Quality. 2021. Volume 1. Pages 561-562.

[152]. As the authors note, this makes a values-based management strategy more promising in specific social groups, such as organizations. In this case, management is focused not only on achieving goals but also on aligning the values and motives of both individual employees and various departments. This involves creating a unified hierarchical system of corporate values that align with the interests and values of each team member [153].

The correlation between the categories of "group" and "commonality" with the category of "common goals" turned out to be quite revealing. Statistical data reveal the crucial role of common goals in group activities. The connection between the categories "group - common goal" occurs significantly more frequently than the category "commonality - common goal," by more than tenfold. This implies that within the scientific community, the understanding of a group is usually associated with the idea of achieving common goals. Conversely, in the case of social commonalities, common goals are considered rarer or less defined, and their presence may be considered an exception. Similar proportions are observed in scientific publications concerning the pairings "professional group" and "professional commonality," at a ratio of 12:1. Clearly, the professional affiliation of a certain community of specialists is more frequently regarded as a group.

G.B. Korableva's approach indicates a more comprehensive understanding of professional commonalities, encompassing various forms of professional integration. In her terms, professional commonalities include professional circles (with an emphasis on the exchange of professional information), professional groups (which function differently in organizations and in society), professional associations (such as unions or scientific associations), and professional strata (reflecting status hierarchies within a profession). Thus, professional commonalities encompass the integration of

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[152] Maslennikov A. A., Volkov V. V., Kapba S. R. "Psychological Aspects of Managing an Educational Organization in the Context of Integrating Personal and Group Values." Journal: Problems of Modern Pedagogical Education. 2018. Issue 61-1. Page 388.

[153] Maslennikov A. A., Volkov V. V., Kapba S. R. "Psychological Aspects of Managing an Educational Organization in the Context of Integrating Personal and Group Values." Journal: Problems of Modern Pedagogical Education. 2018. Issue 61-1. Page 388.

individuals into a social system based on professional characteristics, regardless of the type of state or social structure [154]. The author attempts to systematize different forms of social integration within professional communities, which might present a promising starting point for future sociological research. However, additional argumentation is required to assert the independence of these forms of association "from the type of state and social structure." Authors like V.A. Mansurov and O.V. Yurchenko present an opposing view. They emphasize that in domestic works, professionals are analyzed considering the alignment of their activities and social settings with the interests of the state and the fulfillment of certain socially significant functions. In post-Soviet Russia, sociologists conclude that the concepts of "profession" and "professionalization" are closely linked to the type of socio-economic system and the historical features of its development [155].

Based on the analysis conducted, our conclusion is that the aggregate of IT professionals is more appropriately and accurately defined as a socio-professional group. This conclusion is based on the socio-group characteristics of IT specialists, which are important factors for operationalizing their examination as an object of sociological research:

- Unlike social communities, social groups do not imply complete coexistence, limited by certain boundaries (geographically - nearby), temporary (all day together), or natural unity (we - necessarily of the same blood). Professional groups are subjective in nature, including those created in the interest of organizing specific types of activities. In particular, the creation of professional groups of IT specialists becomes a reaction to the formatio [156]. Clearly, these groups can be located in any geographical

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[154] Korableva G. B. "Institutional Foundations of Forming Professional Communities." Journal: Bulletin of Southern Ural State University. Series: Social and Humanitarian Sciences. 2006. Issue 2 (57). Page 126.

[155] Mansurov V. A., Yurchenko O. V. "Sociology of Professional Groups: History of Formation and Prospects." Journal: Bulletin of the Institute of Sociology. 2013. Issue 7. Pages 101-102.

[156] Deryugin P. P. et al. "Network Diagnostics of Identification Strategies in the Organization: Methodology and Pilot Research Experience." Journal: Discourse. 2020. Vol. 6. No. 4. Pages 73-94.

coordinates; they can be created by interested parties to achieve specific goals in professional activities;

- A socio-professional group is an association of individuals sharing a common significant activity-related feature, on which their participation in a certain activity is based, linked to a system of relationships regulated by formal or informal social institutions [157]. The defining characteristic of the socio-professional group of IT specialists is a distinct connection (as well as social remoteness, social distance) with the digital space, digital society, as well as with the social, economic, political, and cultural institutions forming the digital space;

- People often consciously and willingly join groups, whereas involvement in a social community may be determined by genetic, familial, or ethnic reasons. Concerning IT specialists, they aren't born into this field; these professionals are cultivated by social institutions over an extended period;

- Socio-professional groups represent small segments of society, unlike social communities, which can encompass a vast number of people. This applies to IT specialists, who, within the social structure of the most digitally advanced societies, account for no more than 4% of the working population;

- The source of integration in groups is active and conscious, whereas in social communities, it tends to be passive and predetermined beyond the individual's will. IT specialists make their professional choice voluntarily and, in the overwhelming majority of cases, consciously. In this regard, their integration takes on a group-based nature;

- A group stimulates its solidarity and perceives it as a necessary condition for its existence. A community recalls solidarity in crisis conditions and reluctantly. IT specialists form structures of interaction and communication directly and indirectly aimed at creating groups and teams focused on achieving set goals. Among IT

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[157] Frankel, Charles, «Social Values and Professional Values», Journal of Education for Social Work, vol. 5

specialists, there's an array of roles dedicated solely to ensuring the security of the professional environment and the activities of IT groups (IT organizations);

- Groups emerge, develop, and fade away. Communities are historically formed over long periods, and their decline is a result of evolution, often indicating a deep systemic crisis. The socio-dynamics of creating and disbanding groups of IT specialists can occur within very short time frames. There are examples where large groups of IT specialists, comprising thousands of employees, were formed within 2-3 weeks and disbanded just as swiftly after task completion;

- Based on the definition by V.F. Gorokhov and N.N. Vasneva, socio-professional groups, especially in organizational contexts, bring together individuals who not only collaborate and work together but also share common goals and values. These groups may be geared toward achieving specific objectives and imply the alignment of values among their participants. Therefore, shared goals and values play a significant role in defining and functioning socio-professional groups, particularly within an organization [158]. The values of IT specialists are shaped within the unique conditions of their professional activities, inevitably leading to the formation of specific professional values.

From the conducted analysis, it can be concluded that IT specialists should be considered as a distinct socio-professional group, possessing all the characteristics of such social integration. They unite through their shared activities in the information-digital space and share common social values. Thus, IT specialists, as a social group, represent a unique category with their own characteristics and features in the contemporary multidimensional social space [159]. When it comes to "IT communities," it is more accurate to refer to IT users, encompassing all individuals who can be categorized as "users"—individuals or organizations utilizing an operational system to

[158] Gorokhov V. F., Vasneva N. N. "On the Relationship between the Categories 'Social Community' and 'Social Group'." Journal: Bulletin of TSU (Tomsk State University). 2014. Issue 4 (132). Page 19.
[159] Wikipedia. "Social Group." (Accessed on: 04.07.2022) [https://ru.wikipedia.org/wiki/Социальная_группа]

perform a specific function [160]. "Specifically, an Information System User is an individual participating in the operation of an automated system or utilizing its operational results." In its most general form, a socio-professional IT group can be depicted as illustrated in Figure No. 1.1.1.

The Group of IT Specialists as a Research Object

The Certain Characteristics of a Socio-Professional IT Group

The Core Set of Characteristics of a Socio- Professional

IT Users - IT Community

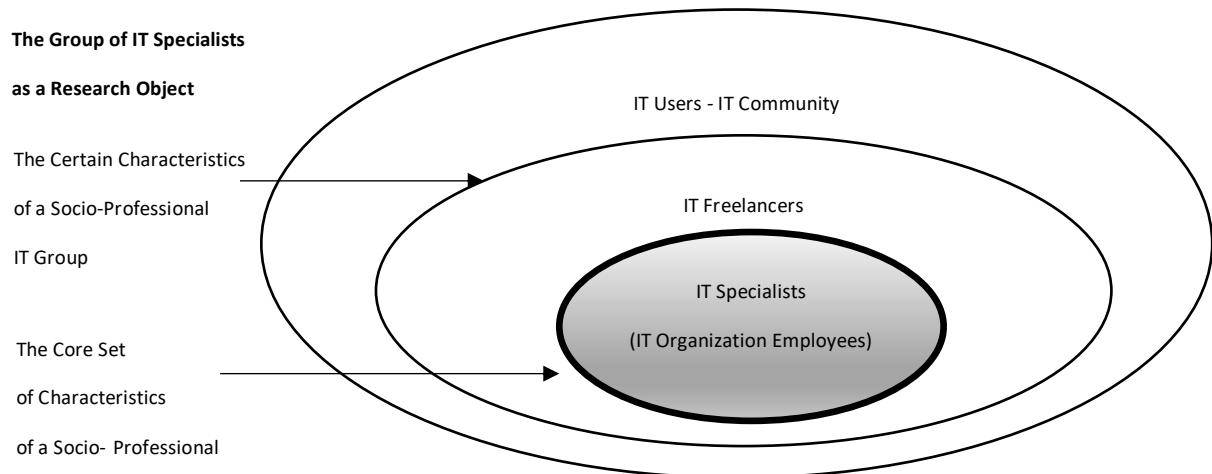IT Freelancers

IT Specialists

(IT Organization Employees)

Fig. 1.1.1. "On the Essence of the Socio-Professional Group of the IT Community as an Object of Study in Sociology"

It should also be noted that other authors define social-professional communities of IT specialists as a group, which, in our view, confirms the accuracy of the conclusion drawn. Examining numerous characteristics of IT specialists, such as self-education, the tendency to organize learning based on self-analysis [161], significant differences from other professionals in the "human-sign system" of professions like erudition and logical thinking [162], mastery of mathematics, English language, and the internet as

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[160]Wikipedia. "User." (Accessed on: 04.07.2022)

[161] Gedranovich V. V. "Competency-Based Approach to Programmer Training." Education Throughout Life: Continuous Education for Sustainable Development. 2009. No. URL: [https://cyberleninka.ru/article/n/kompetentnostnyy-podhod-k-podgotovke-programmista] (Accessed: 02.07.2022).

[162] Orel E. A. "Features of the Intelligence of Professional Programmers." Bulletin of Moscow University. Series 14. Psychology. 2007. No. 2. URL: https://cyberleninka.ru/article/n/osobennosti-intellekta-professionalnyh-programmistov (Accessed: 02.07.2022).

necessary starting conditions for entering the profession [163], the authors use the definition of a professional or social group. Additionally, several studies based on theoretical and empirical analyses confirm the scientific validity of categorizing specialist collectives as professional groups, including groups of IT specialists [164].

In formulating an operational definition of social-professional groups of IT specialists, they should be considered as real groups. In this case, we rely on theoretical and empirical data related to the characteristics of the reality of these groups. The group of IT specialists is a real (homogeneous) social-professional group possessing all the basic characteristics of such groups. This conclusion is based on the results of theoretical analysis and empirical evidence of real social groups in contemporary Russian society obtained by O.I. Shkaratan and G.A. Yastrebov. Respected researchers have validated the assumption that the primary factors influencing the identification of social groups in modern Russian society are a similar attitude towards economic capital and authoritative powers [165]. Economic capital is viewed as a key factor determining social hierarchy and the position of social-professional groups. This characteristic is considered a primary indicator for classifying social-professional groups, a conclusion supported by many Russian and international researchers. For instance, regarding the

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[163] Prokin A. Al., Balandin I. A. "Everyone Can Become a Programmer." E-Scio. 2019. No. 3 (30). URL: [https://cyberleninka.ru/article/n/kazhdyy-mozhet-stat-programmistom] (Accessed: 02.07.2022).

[164] Mansurov V. A., Yurchenko O. V. "Sociology of Professions: Formation of the Discipline and Perspectives of its Development." Professional Groups: Dynamics and Transformation. Moscow, 2008. P. 16-36.; Toshchenko I. Zh. "Structure and Features of the Social-Professional Group of Top Managers." Bulletin of RSUH. Series "Philosophy. Sociology. Art Studies". 2012. No. 2 (82).; Kasyanenko M., Alabin A. "IT Specialists as a Modern Professional Group." INTER. 2017. No. 14.; Mishchenko A. S. "Innovators" as a Special Social-Professional Group in Modern Russia. Petersburg Sociology Today. 2016. No. 7 Yastrebov G. A. "Reproduction of Social-Professional Groups in Contemporary Russia." World of Russia. Sociology. Ethnology. 2009. No. 2.; Borisova S. N. "Study of Professional Groups in Domestic Sociology: Main Theoretical and Methodological Approaches." Bulletin of Lobachevsky University of Nizhny Novgorod. Series: Social Sciences. 2016. No. 2 (42).; Korableva G. B. "Institutional Foundations of Professional Communities Formation." Bulletin of South Ural State University. Series: Social and Humanitarian Sciences. 2006. No. 2 (57).; Gorokhov V. F., Vasneva N. N. "On the Relationship between Categories 'Social Community' and 'Social Group'." Bulletin of TSU. 2014. No. 4 (132).; Chernysh M. "Information Workers: Profile of a Social Group." INTER. 2017. No. 14.

[165] Shkaratan O. I., Yastrebov G. A. "Identification of Real (Homogeneous) Social Groups in Russian Society: Methods and Results." Applied Econometrics. 2007a. No. 3. P. 116.

youth social group, the importance of economic capital is highlighted: " Among young people, there is a contradiction in preferences: they include in the list of prestigious professions those not solely focused on earnings but also on the substantive side of work. However, the primary motive for choosing a profession remains well-paid work, and only then - interest in the activity. It can be concluded that in post-Soviet society, the percentage ratio of professional values among the youth has changed, but the priorities remain unchanged."[166].

The financial situation. The financial status of IT specialists in Russian society should be considered high or very high compared to other socio-professional groups. Numerous analytical materials can serve as evidence for this conclusion [167]. According to the data from the referenced study at the beginning of 2021, the median salary of IT specialists across cities in Russia was 140,000 ₽: in Moscow — 191,000 ₽, in St. Petersburg — 165,000 ₽, and in other regions — 130,000 ₽. These are continuously increasing salaries; in the second half of 2021, IT salaries grew by 17% due to increases in regional indicators. Salaries for support specialists have significantly increased (+38%). Software architects earn more than all other developers — 256,000 ₽, while embedders (specialists embedding elements from external resources like videos from YouTube, quotes from Twitter, photos from Instagram, etc.) receive the lowest — 107,000 ₽. Salaries increased the most for full-stack developers (+25%) in the six-month period, while system engineers saw a 14% decrease in salaries. The highest-paying programming languages are Elixir, Objective-C, Swift, and Golang, with the lowest being Delphi. In the second half of 2021, salaries for Elixir developers increased the most (+59%), while incomes for Delphi specialists decreased the most (-9%). The highest-earning IT specialists work at Avito (248,000 ₽), Skyeng, and Kaspersky Lab (each at 220,000 ₽).

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[166] Bormotov I. V. "Value Choices of Russian Youth: Group Snapshot." CISP. 2016. No. 3-1 (27). P. 129.

[167] "Salaries of IT Specialists in the Second Half of 2021: +17% Due to Support and Administration in Regions." URL: https://habr.com/ru/article/649423/ (Accessed: 04.07.2022)

In 2022, the list of privileges for IT specialists was expanded [168]. The President issued a directive to provide support to the information technology (IT) sphere in the new conditions. Specific measures, including reducing the corporate profit tax for IT companies to zero until the end of 2024, decreasing insurance contributions for IT company executives, exempting employees of accredited IT companies from military service and mobilization, as well as cancelling scheduled inspections until the end of 2024, have already been approved. Additionally, the Ministry of Digital Industry (MinCifry) is developing further support measures, including offering preferential loans for IT companies with interest rates up to 3%, the possibility of obtaining mortgages at reduced rates for workers in the IT sector, and additional funding to compensate for personal income tax (PIT).

Analysis of the economic capital of IT specialists shows their privileged and relatively isolated position in Russian society compared to other socio-professional groups. However, economic reasons remain the primary motivation for the emigration of IT specialists from the country [169]. Countries with developed IT industries have realized the critical necessity of developing competencies in the field of information technology. In the United States, large-scale IT systems are becoming economically viable, and various national research and educational programs are being implemented to stimulate developments in this sector [170].

Authority. Regarding the extent of their powers, it is important to emphasize that this socio-professional group possesses distinctive capabilities[171]. IT specialists possess a specific form of authority relationships – authority of expertise or expert

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[168] "What privileges will the Government provide to IT industry professionals?" URL: https://prav.io/browse/blogs/grazhdanskoe-pravo/kakie-lgoty-pravitelstvo-predostavit-specialistam-it-sfery (Accessed: 04.07.2022)

[169] Florinskaya Y. F., Karachurina L. B. "The New Wave of Intellectual Emigration from Russia: Motives, Channels, and Mechanisms." Monitoring of Public Opinion: Economic and Social Changes. 2018. No. 6. P. 183–200. https://doi.org/10.14515/ monitoring.2018.6.09.

[170] M. Grauer Information Technology, International Encyclopedia of the Social & Behavioral Sciences, 2001, P. 7473-7476

[171] Evetts J. Short Note: The Sociology of Professional Groups: New Directions. Current Sociology. 2006;54(1):133-143

power, based on four essential attributes according to M. Weber: social connections, expert (specialized) knowledge, belief, and charisma. IT specialists notably stand out from other professional groups due to their ability to establish a broad range of social connections in the digital space. Based on the most general data, this potentially includes more than half of Russians [172] and 59.5% of the global population [173]. Proficiency in foreign languages contributes to expanding social contacts, which is often common among IT specialists. IT specialists possess complex and specialized intellectual knowledge, often inaccessible through the educational system, and this expert knowledge is crucial for their professional success. Specifically, 'expert knowledge' is viewed as a 'traditional model for entering the professional field' [174]. Knowledge-intensive technologies are rapidly advancing, rendering university-acquired knowledge obsolete. The equipment and knowledge of IT specialists, as well as educators, must constantly be updated in line with this evolution [175] IT specialists are obligated to continually update their knowledge independently, utilizing various methods. Moreover, many consider international education as a pathway for emigration, especially in educational and language programs [176]. Specialized knowledge enhances the expert capabilities of IT specialists, which can be regarded as a form of authority. Developing expert skills is an essential part of preparing IT specialists, necessitating ongoing learning and improvement throughout their

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[172] "More than half of the population of Russia owns computers." URL: https://www.marketing-services.ru/directory_marketing/analytics/reviews_market/6880.html (Accessed: 10.07.2022)

[173] "Figure of the day: How many people in the world use the internet? Reported by 'Rambler.' URL:https://news.rambler.ru/internet/45705599/?utm_content=news_media&utm_medium=read_more&utm_source=copylink (Accessed: 10.07.2022)

[174] Vatoropin A.S., Startseva N.N. "Event Managers: Characteristics and Practice of Entry into the Professional Field." Discussion. 2015. No. 3 (55). P. 73.

[175] Y. L. Zhukovskiy, B. U. Vasilev and N. I. Koteleva, "Quality estimation of continuing professional education of technical specialists," 2017 International Conference "Quality Management,Transport and Information Security, Information Technologies" (IT&QM&IS), 2017, pp. 704-707, doi: 10.1109/ITMQIS.2017.8085921.

[176] Florinskaya Y.F., Karachurina L.B. "New Wave of Intellectual Emigration from Russia: Motives, Channels, and Mechanisms." Monitoring of Public Opinion: Economic and Social Changes. 2018. No. 6. P. 183—200. P. 191. URL: https://doi.org/10.14515/ monitoring.2018.6.09

professional careers. Self-learning, online courses, and professional certification help them acquire new skills and knowledge, contributing to successful careers and well-paid jobs in the IT field [177]. Thus, IT specialists wield expert power, enabling them to influence others, even without direct subordinates. This form of authority becomes evident in the information society and digital space, particularly during election times.

Belief. IT specialists believe in rational knowledge, science, and digitalization, considering them as values. This belief, rooted in rationality and science, led to the formation of the "Church of Turing" in the late 1980s. This "church" is part of the transhumanist movement, which seeks to enhance humanity through technology and even achieve immortality [178]. The "Church of Turing," as an educational movement, unites IT specialists who believe in rational knowledge, science, and the potential of technology. Their beliefs encompass ideas about artificial intelligence, consciousness uploading, space exploration, and the creation of compatible virtual worlds [179]. In any case, the emergence of this structure demonstrates the collective orientation of IT specialists towards scientific knowledge and a rational explanation of any facts in the surrounding reality.

Charisma. According to Max Weber, the understanding of power was associated with charismatic leadership, meaning the ability to influence large masses of people, create an emotional impact, and possess strong rhetorical skills. Charismatic leadership implies the exceptional authority of certain individuals within a community. It's a type of leadership based on emotional devotion to the leader, the exceptional sanctity of their authority, heroism, or exemplary character, and unconditional submission to the norms or order defined by such a leader [180]. Weber attributed to these traits the ability

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[177] Zuev D.O., Kropachev A.V., Usov A.E. "Features of Professional Training and Retraining of IT Experts in Accordance with Current Labor Market Needs." Science, Education, and Culture. 2018. No. 2 (26). P. 39.

[178] Bainbridge W.S. "Turing Church." URL: https://wrldrels.org/ru/2019/08/03/turing-church/ (Accessed: 10.07.2022)

[179] Khvastunova Y.V. "Foundations of the Digital Society of the Future (Based on the Analysis of the Postulates of the Turing Church)." Sociology. 2021. No. 5. P. 255.

[180] Genindorzhiyeva D.B. "The Concept of Max Weber's Charisma." Bulletin of the BSU. Education. Personality. Society. 2013. No. 5.

to openly communicate while standing out from the crowd and possessing qualities that are perceived by others as supernatural or exceptional abilities and qualities not accessible to an ordinary person.

Alongside this, modern publications analyzing the personal characteristics of IT specialists often portray their socio-psychological profile as somewhat contradictory. S.S. Merzlyakov points out the "introversion" of Russian IT specialists, which, in his view, hampers the creation of bridging capital. He also notes their inclination toward solving non-standard tasks and the need for challenges, which indicate individualism. Despite the presumed dominance of technically rational thinking, this can also be beneficial for reforming institutions and dealing with simulated constructs [181]. Numerous studies highlight the introverted, closed-off nature of Russian IT specialists. For instance, L.N. Plotnikova mentions how many programmers strive to create their virtual world in the computer environment, rejecting various constraints of the real world. Foreign authors also observe that programmers seek to use virtual reality to overcome physical limitations, aligning with their work needs. Analyzing the personal characteristics of highly skilled programmers, researchers note their self-sufficiency, perseverance, but also introversion and detachment from others. While these traits are valuable for organizational purposes, they can pose challenges in interpersonal interactions. Some programmers prefer isolation, viewing computer work as a substitute for social interactions. However, expectations regarding the personal qualities of contemporary programmers vary. While there's a general consensus on the necessity of traits like emotional stability, punctuality, precision, thriftiness, and high productivity, programmers themselves emphasize extreme attentiveness, logical thinking, and perseverance, underscoring the specificity of their professional activity [182].

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[181] Merzlyakov S.S. "Sociocultural Features of Russian IT Specialists." Labor Economics. 2020. Volume 7. No. 11. P. 1037-1054. P. 1051. doi: 10.18334/et.7.11.111128

[182] Plotkina L.N. "Socio-Psychological Analysis of Professionally Significant Characteristics of Information Technology (IT) Specialists." Proceedings of the Samara Scientific Center of the Russian Academy of Sciences. 2010. No. 5-1. P. 141-142

The professional values and attitudes of IT specialists also shape specific psychological states that are connected to the nature and conditions of their professional activities. Research by I.M. Kozina and E.V. Seryozhkina has revealed that factors such as overload, uncertainty about the future, lack of recognition for work results, and constraints in task execution have a negative impact on employees. All these aspects amalgamate into a "zone of professional risk," yet each affects employees differently. Russian IT specialists exhibit greater adaptability to production stressors as they have become accustomed to unfavorable working conditions, which have long been considered the norm. This implies that the threshold at which stress becomes an obstacle to work remains unnoticed by both management and the specialists themselves [183]. Naturally, such a socio-professional environment does little to promote the display of charisma among IT specialists.

As for other socio-professional characteristics of IT specialists, namely, characteristics related to their human, cultural, and social capitals, among others, they "follow" the criteria of economic capital and authority in determining the place and role of IT specialists in the social structure of Russian society. These aspects will be discussed in subsequent sections of the dissertation.

Operationalization. Based on the analysis conducted and the premises of the Sociological Encyclopedia [184], the professional group of IT specialists is understood as a collective of individuals in the IT sphere engaged in similar or closely related professional activities, all operating within the IT space. Secondly, they possess the characteristics of a socio-professional group of specialists with similar knowledge and skills in the IT sphere. Thirdly, they represent bearers of a distinctive professional culture and ethics, rooted in identical or similar social values, serving as guiding principles and bases for decision-making strategies and behavior. These values are formed based on an understanding of processes in the information society. Following

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[183] Kozina I.M., Seryozhkina E.V. "Production Factors of Stress in the Work of Russian and French IT Specialists." Sociological Studies. 2019. Volume 45. No. 5. P. 26-35.

[184] Sociological Encyclopedia. Available at: https://voluntary.ru/ (Accessed on: 02.02.2022)

the reflections of T. Parsons and N. Luhmann, T. Kurtz pointed out the evolving significance of the profession as a sociological category for analyzing the digital society. Professions are practical academic professional groups oriented toward specific social values [185]. Fourthly, they are employees of IT organizations identifying with IT professions that have emerged in the digital space, interrelating with other representatives of digital activities—users, competitors, interaction subjects, and the government [186]. Fifthly, the interaction, solidarity, and confrontation of the social group of IT specialists with other socio-professional groups are determined by the goals of development and coexistence within the IT industry [187]. Ultimately, this group shares a common interest system, accompanied by established norms in the field of information technology, founded on shared values that differentiate them from other communities, thanks to a specific demarcation principle [188].

The distinctive characteristics of the socio-professional group of IT specialists as an object of sociological research are contingent upon the circumstances and conditions of development within contemporary Russian society. According to O.I. Shkaratan and G.A. Yastrebov, the study of new homogeneous groups poses an "extremely complex task" [189]. It's pertinent to discuss the heuristic difficulties associated with the development of the professional group of IT specialists.

Firstly, it is unjustified to categorize the professional group of IT specialists among the groups of simple socio-professional reproduction. According to G.A.

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[185] Kurtz, T. The End of the Profession as a Sociological Category? Systems-theoretical Remarks on the Relationship between Profession and Society. Am Soc 53, 265–282 (2022).

[186] Deriugin P.P. et al. "Methodology Validation and Pilot Research Experience of Identification Strategies." This seems to be a part of a publication titled "Human Capital in the Context of the COVID-19 Epidemiological Crisis: Universities, Corporations, Values" from 2020, spanning pages 7 to 17.

[187] P. Deriugin, O. Yarmak, E. Strashko, E. Kamyshina, O. Bannova Integration of human and social capital: the experience of Russian, Chinese and European corporations // SHS Web of Conferences. - 2022.

[188] Shchepansky Ya. "Elementary Notions of Sociology." This appears to be a book or academic work from Moscow in 1969, encompassing pages 117-118.

[189] Shkaratan O.I., Yastrebov G.A. "Identification of Real (Homogeneous) Social Groups in Russian Society: Methods and Results." This seems to be an article in "Applied Econometrics" from 2007, Issue 3, on page 116.

Yastrebov, the concept of "reproduction" of social groups implies that professional communities are periodically refreshed and developed through interaction and exchange with the surrounding environment. In this process, some professional groups may disappear and cease to exist, while new ones emerge in their place [190]. Using G.A. Yastrebov's terminology, the professional group of IT specialists constitutes a "group of expanded reproduction" - a professional group previously unknown to history and science, emerging anew. The emergence of this professional group became an objective demand of a society where 63.2% of the global population were Internet users in 2020 [191]. Describing the digital society, D.E. Dobrinskaya notes that it is a society whose infrastructure operates through digital technologies (big data and artificial intelligence, algorithms and algorithmic systems, cloud computing, etc.), with network structures and platforms as the basic forms of organization and social interaction [192]. Digitalization permeates all spheres of social life and significantly influences the growth of a society's socio-economic potential, particularly impacting GDP growth. However, establishing direct links between prosperity growth and ICT influence is challenging. Despite the intensive development of the digital economy, there remain several issues associated with its definition, classification, and measurement [193].

The increase in the number of IT specialists and firms in the digital economy emphasizes the relevance of studying this group. The growth in the number of this professional group varies, and the proportion of IT specialists among the working-age population differs among countries. For instance, in the United States, this professional group constitutes 3.79% of the entire working-age population, while in Germany and

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[190] Yastrebov G.A. "Reproduction of Socio-Professional Groups in Contemporary Russia." This appears to be from "World of Russia: Sociology, Ethnology" in 2009, Issue 2, on page 117.

[191] World Internet Users and 2020 Population Stats (2020). Available at: https://www.internetworldstats.com/stats.htm (Accessed: 03.07.2022).

[192] Dobrinskaya D.E. "What Is a Digital Society?" This appears to be an article in "Sociology of Science and Technology" from 2021, Issue 2, on page 114.

[193] Prokhorov, P. E. Approaches to measuring the contribution of the digital economy to the gross domestic product of the Russian Federation // Bulletin of Plekhanov Russian University of Economics. 2019. No. 5 (107). P. 33.

the United Kingdom, it's around 3.4%, and in Russia, it was 1.18% in 2006 [194]. Despite the measures taken, Russia still faces an excess of graduates in economic, legal, and other humanities fields against a shortage of specialists in the field of information technology.

The demand for IT specialists is driven by the development and widespread implementation of information technology infrastructure [195]. Referring to available research from Rosstat, Tadviser, HeadHunter, and Statista conducted in 2022 to assess the workforce in the IT industry and determine its overall condition, it was found that in 2019, approximately 1 million specialists were employed in the IT sector in Russia. By 2020, there was an increase of 400,000 new skilled workers. From 2019 to 2021, the proportion of companies involved in information technology continued to rise, increasing by more than 1.5 times, consequently leading to a critical need for personnel.

According to the June 2022 report by the Social Policy Committee of the Federation Council, mass emigration of IT specialists from Russia resulted in a severe shortage of personnel within the industry, with a deficit reaching 170,000 individuals. As per data from Habr Career, over 45% of IT specialists moved to Europe, 10% are employed in Georgia, 9% settled in Turkey and Asia, while another 6% chose Armenia. Primarily, the personnel deficit arises among software developers engaged in creating digital products and technologies, as well as among analysts, designers, system administrators, and managers. It is anticipated that by 2024, the total number of developers worldwide will reach 28.7 million people. Analysts at Statista project that China will witness the highest influx of programmers. Furthermore, research on the current dynamics of employment changes in the country conducted by the McKinsey Global Institute indicates a decrease in the demand for low-skilled labor. Up to 6.7 million jobs in the Russian market might be reduced within the next decade.

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[194] http://900igr.net/prezentacija/ekonomika/it-kadry-v-rossijskoj-ekonomike-209351/dolja-it-spetsialistov-ot-naselenija-5.html (Accessed: 03.07. 2022)

[195] Faulconbridge JR, Muzio D. Professions in a globalizing world: Towards a transnational sociology of the professions. International Sociology. 2012;27(1):136-152.

Therefore, the professional group of IT specialists, as an emerging entity in Russian society, possesses unique characteristics that make direct analogies and comparisons with other professional groups impossible. However, in certain cases, IT specialists can be regarded as part of a specific socio-professional group of young engineers, which could be beneficial for analyzing modernization processes [196].

The conclusion drawn from the perspective of IT specialists as a social group resulting from expanded professional reproduction suggests the relevance of studying this professional group through the lens of values. In this context, reference can be made to the outcomes of a specific study by V.V. Bayluk, where professional activity values were analyzed as the object of study in examining the peculiarities of professional groups. These values include:

- Professional values form the basis of a specialist's activity, contributing to their successful integration into society and creating a sense of belonging to a common cause[197];

- Values in the professional sphere can be multifaceted, encompassing aspects related to the qualities and skills of the worker as well as aspects tied to financial compensation for their efforts. These values can be both spiritual and material in nature;

- The professional values of IT specialists simultaneously reveal the factors and conditions influencing the functioning and development of their professional group;

- The professional values of IT specialists reveal the specifics of professional self-realization, playing a role not just as another success principle, but as the fundamental principle in the system of comprehensive and harmonious personality development [198];

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[196] Kozina, I. M., Vinogradova, E. V. Young engineers: labor values and professional identity // Monitoring. 2016. No. 1 (131). P. 216

[197] Bayluk, V. V. Values of professional self-realization of personality // Pedagogical Education in Russia. 2015. No. 3. P. 24.

[198] Professional values in the conditions of global digitization / Deriugin, P. P., Bannova, O. S. // XVIII International Scientific and Practical Internet Conference 'Youth in the Modern World: Problems and Prospects', May 20, 2022

- The value orientations of IT specialists, defined by their professional needs and interests, serve multiple roles: they act as meanings, goals, and motivations simultaneously.

Taken together, the merits of the professional values of IT specialists, as indicators of the success of social development within this professional group, can be considered as the primary object of direct research and diagnostics.

The second characteristic lies in the fact that the emergence of the professional group of IT specialists occurs "on the go," within the course of active social transformations instigated by digitization. On the contrary, the classical formula for studying professional groups assumes static conditions: "When studying the reproduction of socio-professional groups, societies undergoing systemic transformations are not considered" [199]. R. Kapelyushnikov further develops this idea, notably mentioning: "Social systems undergoing profound transformation are deinstitutionalized almost by definition: their previous institutional framework is already broken, while the new one is yet to be built, as it is always a difficult and protracted process with no guaranteed outcomes [200]. Essentially, the state of systemic transformation in society can be understood as a significant constraint in studying the professional group of IT specialists. Alongside this, the products created by IT professionals – the outcomes of ICT development in various forms – contribute to providing a scientific analysis of rapidly changing societies, societies at risk: the products created by IT professionals stimulate theoretical and empirical analysis of the socio-dynamics in the formation of IT specialists as a professional group. Particularly, the development of potentials for an interdisciplinary approach to conducting such analysis, which according to O.N. Yanitsky, represents a fundamental condition for conducting sociological studies of social groups in contemporary Russian reality [201].

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[199] Yastrebov, G. A. Reproduction of socio-professional groups in modern Russia // World of Russia. Sociology. Ethnology. 2009. No. 2. P. 116.

[200] Kapelyushnikov, R. 'Where does the beginning of the end lie?...' (On the question of the end of the transition period in Russia) // Voprosy Ekonomiki [Economic Issues]. 2001. No. 1. P. 141.

[201] Yanitsky, O. N. Sociology of risk: key ideas // World of Russia. Sociology. Ethnology. 2003. No. 1. P. 33

It's evident that the speed of the IT industry's workforce growth significantly influences the transformation of all spheres of modern society. The increase in the number of IT professionals not only fosters positive trends in society but also gives rise to numerous conflicts and value differences, as highlighted by O.N. Yanitsky. This is associated with the increase in the number of issues extending beyond the IT industry's scope.

Appearance of social problems intensifies the negative aspects of risk within society. In the broadest sense, concerns about the direction and negative social consequences in scientific research can be attributed to a range of causes and effects. Let's enumerate the most frequently encountered among them:

- To a significant extent, professional values differ in their rational nature. The fundamental element of IT specialists' professional values lies in their scientific and technical knowledge, serving as the driving force behind the industry's development. This progress in technical capabilities affects not only the production sphere within society but also influences fundamental values and structure. Consequently, the professional values of IT specialists are increasingly geared toward promoting rationality and technocracy [202]. Such an approach to the role of professional values in the new information world often proves beneficial by reducing the influence of humanitarian values;

- These values are singled out as being destructive concerning traditional societal values, i.e., values that remain important to the majority of the population in Russia. It can be argued that the information society shapes a new, technologically driven civilization that relies on entirely new social and communicative practices;

- The values of the information society significantly impact all aspects and levels of education, where the professional values of IT specialists are built on the basis of intellectual systems and digital technologies. However, the educational system does not always manage to adapt to such rapid changes;

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[202] Deryugin, P. P., Miletskiy, V. P., Bannova, O. S., Kamyshina, E. A. Social capital in the era of crises: systemic foundations of network measurements // Social Capital in the Era of Crises: Systemic Foundations of Network Measurements. 2022. P. 88-92.

- It becomes evident that the technical and technological foundations of the digital civilization are linked not so much to the values of IT specialists but to society's unreadiness to embrace new value orders and integrate into the new global contours of the information society. Conversely, globalization processes collide with the processes of demassification and social localization of individual layers and groups within society;

- Differences in values between male and female programmers regarding professional growth, wages, and the adoption of new technologies are increasing.

The assessment, analysis, and diagnosis of the peculiarities of the socio-professional group of IT specialists become a distinct, relevant research direction, clearly pointing out the importance of considering a range of specific characteristics of professionals in this field [203]. This determines the stability of modern socio-economic and political systems, enabling the public and the state to influence the effective work of specialists in this profile. Unfortunately, the values formed in the mindset of IT specialists do not always align with the expectations and demands of society as a whole. In some cases, there is an individualization of consciousness manifested in a consumerist lifestyle and a refusal to engage in labor not associated with high social status and income. These trends, inherent in a certain portion of IT specialists, do not fit into the commonly accepted value system prevailing in Russian society [204]. Without careful scientific analysis of the process of shaping the values of IT specialists, taking into account the dynamics of interaction between this specific socio-professional group and society, their differences will become increasingly noticeable.

Thirdly, "The change in the quality of socio-professional groups is associated with the nature, characteristics of individuals joining social groups, as well as with the change in the social properties of those individuals who form the cores of these

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[203] Svyatkina, O. I. Career of a 1C Programmer // StudNet. 2020. No. 5

[204] A. Beissenova, D. Shormanbayeva, D. Sundetbayev «Transformation of System of Values in the Kazakhstan Society (Based on the Results of Sociological Research)»,Procedia - Social and Behavioral Sciences,Volume 140,2014, Pages 168-171

groups" [205]. Traditionally, the structure of these professional groups is determined by essential elements that include the influence of the social environment. More specifically, this influence is related to institutions such as the family, upbringing systems, educational institutions, professional training, as well as cultural institutions belonging to primary territorial communities [206]. In this case, on the contrary, the professional group of IT specialists represents employees whose preparation is minimally influenced by family situations (due to the limited opportunities to implement principles of professional succession), and university programs are often deemed insufficient for preparing fully qualified specialists in information technology[207].

Undoubtedly, the discussed characteristics of the socio-professional group of IT specialists to some extent can affect the nature of research and require accounting for the circumstances shown. Alongside this, since 2006, the list of socio-professional groups in Russian society has not changed, "only their shares and positions in the stratification hierarchy have changed" [208], allowing for the analysis of the professional group of IT specialists as established. Furthermore, numerous sociological studies on various characteristics of IT specialists as representatives of a distinct socio-professional group provide a solid foundation for such analysis.

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[205] Yastrebov G. A. Reproduction of Socio-Professional Groups in Modern Russia // World of Russia. Sociology. Ethnology. 2009. No. 2. P. 119

[206] Yastrebov G. A. Reproduction of Socio-Professional Groups in Modern Russia // World of Russia. Sociology. Ethnology. 2009. No. 2. P. 119

[207] Self-education - the key to success for IT specialists. http://www.i2r.ru/static/367/out_19130.shtml (Accessed: 02.07.2022)

[208] Yastrebov G. A. Reproduction of Socio-Professional Groups in Modern Russia // World of Russia. Sociology. Ethnology. 2009. No. 2. P. 117.

1.2 Sociodynamics of Values within the Socio-Professional Group of Russian IT Specialists in the Context of P.A. Sorokin's Integral Concept: Heuristic Potential and Contemporary Interpretation

The social dynamics or sociodynamics of values within socio-professional groups of IT specialists are conditioned by the emergence and development of the information society and the specific interactions of IT groups, which reflect in the properties and characteristics of their livelihoods and behavior [209]. Становление новых социальных групп не происходит бесконфликтно. The formation of new social groups doesn't occur without conflicts. On the contrary, as noted by V.A. Semenov, professional differentiation is the central theme of the most monumental and ambitious work in sociology, the four-volume set by P.A. Sorokin titled "Social and Cultural Dynamics." It presents society as continuous social and cultural fluctuations, examining the causes, forms, and consequences of the emergence of new social entities, new social strata, communities, and groups, including professional groups [210].

Since the times of Auguste Comte, social dynamics have been understood as "the sphere of those regularities that are not only determined by social phenomena but are also subject to various conditions of human life, including geographic-climatic, political, and economic factors. As a result, the transformation of these regularities implies the constant renewal of various societal structures, considering the laws of modernity [211]". Sociodynamic changes in societal values demand continuous attention in their examination. A particular importance lies in the study of values among new socio-professional groups, including IT specialists. These professionals exert a noticeable influence on altering the social structure of contemporary Russian society. Present-day social dynamics among IT specialists are characterized by the fusion of global and local (national, ethnic) trends, significant consumption dynamics, crises in

[209] https://translated.turbopages.org/proxy_u/en-ru.ru.11cdcd43-62d3b113-b858e018-74722d776562/https/en.wikipedia.org/wiki/Social_dynamics

[210] Semenov V. A. 'Social and Cultural Dynamics' by P. Sorokin as a Meta-Theory of Socio-Cultural Conflict // Bulletin of KGU. 2006. No. 1

[211] Kont O. The Spirit of Positive Philosophy: A Word on Positive Thinking. – Rostov-on-Don: Phoenix. – 2003. – 256 p. P. 42.

spiritual values, and the growing impact of information technologies. All these factors contribute to accelerating social changes, forming unique forms of sociality, as noted by Jean Baudrillard, and the evolution of sociality, as indicated by V.G. Fedotov. In such socio-historical conditions, traditional mechanisms of managing social dynamics prove ineffective for new social groups, underscoring the importance of developing creative socio-cultural and ethical-legal regulators. This emphasizes the role of social and humanitarian sciences in modern society [212].

As emphasized by V.A. Ponomarev, **the socio-professional component of the social structure** is indeed a crucial indicator of the sociocultural potential of society[213]. Therefore, it would be fair to note that under the influence of the development of values among IT specialists, society is dynamically and diversely shaped, acquiring and fostering the priority values of emerging professions that hold particular relevance in the 21st century. By the end of the second decade of the 21st century, Russians found themselves in a situation where informational and digital activity and competency evolved from elements purely associated with professional, educational, or leisure activities into a significant criterion for societal stratification: possessing digital technologies has become an indisputable criterion for social stratification [214]. The influence of this new criterion for stratification intensifies in the context of active digitalization in the sphere of labor: economic activity shifts toward the service sector, labor increasingly involves the production and processing of information, and "digital technologies and computer networks play a key role in the emergence of the 'new economy'[215].

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[212] Khrapov S. A., Vishnyakova A. M. Modern Social Dynamics: Specifics and Trends // Bulletin of KalmSU. 2022. No. 2 (54). P. 118.

[213] Ponomarev V. A. Transformation of Social Structure in Contemporary Russia // Humanities and Social Sciences. 2007. No. 6. P. 74-75.

[214] Serpa, Sandro & Ferreira, Carlos & sá, Maria & Santos, Ana. (2020). Digital Society and Social Dynamics. 10.14738/eb.17.2020.

[215] Strebkov D.O., Shevchuk A.V., Spirina M.O. Self-Employment in the Remote Work Market: Spread of Innovative Labor Practices // Monitoring of Public Opinion: Economic and Social Changes. 2016. No. 6. P. 89–106

The increasing significance and new hierarchical position of IT specialists in the social structure of society, whose activities increasingly influence the functioning of social institutions, overall contributing to the transformation, progression, and development of Russian society, have been noted in the majority of publications dedicated to analyzing contemporary Russian society. In this regard, the values of IT specialists should be regarded as one of the most significant social forces driving the dynamic transformation of Russian society toward a new state [216] – the digital society, its changes, fluctuations, and variations. It is important to emphasize the relevance of P.A. Sorokin's conclusion that 'Values upon which life is built also change. People become disillusioned with them, reject them, and new values emerge. Fluctuations (fluctuations) occur from one extreme to another' [217].

The choice of the fundamental principles of P.A. Sorokin's sociodynamics analysis as the basis for this research is not accidental. As numerous studies on the scientific contributions of Pitirim Alexandrovich show, the conceptual positions of his theory possess significant predictive potentials [218], [219], [220]. In particular, the exploration by Professor V.V. Vasilenko, a researcher of P.A. Sorokin's work, reveals several heuristic potentials in his sociological theory, which hold crucial importance in analyzing the contemporary phase of the emergence of the information society and examining the values of IT specialists [221]:

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[216] Khudyakov S. I. Sociocultural Dynamics: Analysis of Main Theories // RUDN Bulletin. Sociology Series. 2009. No. 2. P. 24.

[217] Kasyanova E. V. "Social and Cultural Dynamics" by P. A. Sorokin and the Threat of a Totalitarian Society // Scientific and Technical Bulletin of Information Technologies, Mechanics, and Optics. 2006. No. 24. P. 231.

[218] Tkachenko A. V. A system approach in sociological works of P. A. Sorokin and A. Toynbee // Systems Psychology and Sociology. 2021. № 3 (39). P. 105–115.

[219] Krotov, Pavel. "Pitirim Sorokin Studies in Russia in the Context of the New Section on Altruism, Morality, and Social Solidarity in the American Sociological Association." The American Sociologist, vol. 43, no. 4, 2012, pp. 366–73.

[220] Antonovskiy A. Yu., Barash R. E. "The System of Sociology" by Pitirim Sorokin and the System-Communicative Approach // Monitoring. 2021. No. 6.

[221] Vasilenko V. V. Crisis of Our Time in the Scientific Legacy of P. A. Sorokin (on the 120th Anniversary of P. A. Sorokin's Birth) // Science. Innovation. Technologies. 2008. No. 5.

- The practical application of P.A. Sorokin's integral methodology (Academician Yu.V. Yakovets) [222];

- The truthfulness of the theoretical conclusions is confirmed by the alignment of the forecasts made on their basis with the actual sociodynamics, which foresaw the course of events in history for many decades. This leads to the conclusion that P.A. Sorokin's methodology experiences its most significant relevance in the first half of the 21st century, before giving way to more advanced doctrines that are currently unknown to us [223];

- Significant predictability in anticipating trends in social development, changing at a fantastic pace [224];

- 'Ideas expressed half a century ago about the necessity of environmental protection, disarmament, freedom of movement and information exchange, new approaches to education, family, philosophy, religion, and science, can become essential tasks of collective salvation. These ideas point to real, albeit challenging, paths to improve our world. Have salvation and survival ever been easy tasks?' [225];

- The predictive efficiency of P.A. Sorokin's integral methodology and his crisis concept is evident in their ability to operate within a comprehensive system that includes society, culture, and individuality;

- The study of P.A. Sorokin's scientific legacy is of great interest because his theory not only stands out for its original integral methodology but also demonstrates practical significance and effectiveness in the modern world;

- The optimistic strategy of P.A. Sorokin's theory reveals the potential of constructive sociocultural forces through changes in the human spiritual sphere. This

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[222] Yakovets Yu. V. Great Insights of Pitirim Sorokin and Global Trends in Society Transformation in the XXI Century. – Moscow, 1998. – P. 39, 25.

[223] Yakovets Yu. V. Priceless Gift // Sorokin P. A. Social and Cultural Dynamics. – St. Petersburg, 2000. – P. 7.

[224] Lomonosova M. V. Pitirim Sorokin — Russian Classic of Western Sociology // Syktyvkar: Publishing House of PSU named after Pitirim Sorokin, 2019. P. 11-19.

[225] Golosenko I. A. The Problem of Crisis in Society and Culture in Pitirim Sorokin's Sociology // Russian Sociology. – Moscow, 1997. – P. 153.

strategy opens the way to the formation of a new integral type of society, possibly based on the synthesis and convergence of positive aspects of capitalist and socialist models [226].

The highest appraisals of P.A. Sorokin's research were earned among European and American scholars. In specialized studies, they emphasize that the author deeply and brilliantly elaborates on an original integral approach to the structure and evolution of the sociocultural universe, making a solid contribution to the theory of macro-level sociocultural phenomena and long-term sociocultural processes [227]. P.A. Sorokin developed the theory of 'sociocultural supersystems' as macro units of historical development, which is one of the most developed aspects of his research. This theory serves as the theoretical foundation for a comprehensive study of societal development and provides scientific substantiation to this approach [228]. According to this original paradigm, revolutions, wars, and other sociocultural upheavals alternate in history during periods of change and crises. Moreover, they are often interconnected and can provoke each other, creating prolonged cycles of human suffering. Studying this carefully, the scholar concludes that the problem, by its nature, has a 'systemic' character, meaning that crisis periods occur when society is in imbalance and lacks integration. For example, Western civilization has made significant strides in knowledge (Truth) and art (Beauty) in recent centuries but lags behind in altruistic and constructive love (Goodness). As a result, the civilization itself is in danger. Sorokin finds the key to these eternal problems at a higher level of human thought and aspiration, proposing a series of highly controversial and seemingly paradoxical but

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[226] Vasilenko V. V. Crisis of Our Time in the Scientific Legacy of P. A. Sorokin (on the 120th Anniversary of P. A. Sorokin's Birth) // Science. Innovation. Technologies. 2008. No. 5. P. 112.

[227] Johnston, Barry V. (1999). Pitirim A. Sorokin on Order, Change and the Reconstruction of Society: An Integral Perspective. The Comparative Civilizations Review, 41.

[228] Alalykin-Izvekov, Vladimir N. (2011). Sorokin's Contribution to the Civilizational Theory and Science // Dialogue and Universalism. Vol. XXI, No. 1/2011, 3351.

essentially eternal concepts of selfless, constructive love and a balanced society with a developed integrative system [229].

Summing up, it can be said that the assessment of the significance of the integral approach developed by Sorokin for studying the dynamics of IT specialists' values is relevant and important in the current context, considering modern challenges and tasks. Contextualizing Sorokin's integral doctrine will provide us with a measure of its originality as well as integration of some of its limitations. Sorokin's intellectual contribution was made in a unique historical context marked by two wars and social-political upheavals in Europe, along with the rapid development of American industry. This context had similarities to the challenges faced by the modern world [230].

The study of the impact of new values emerging from sociocultural changes has its fundamental basis in the works of P.A. Sorokin, primarily his major four-volume work "Social and Cultural Dynamics" [231]. This research emphasizes the main idea of the diversity of forms in the emergence of new values and their cyclic nature, ensuring the activity of societal dynamics, and expanding the scope of social processes taking place within it. Sorokin believed that this repeating cyclical process of developing and reproducing new values not only sustains the continuity and integrity of society but also contributes to the unity of society and the formation of new social systems that reflect the specific socio-historical characteristics of a new era [232]. The assessment of sociodynamics, according to Sorokin's presentation, includes an analysis of the following key aspects:

1) "Logical subject," referring to the object undergoing changes or being in a state of social dynamics - in this case, it pertains to the values of IT specialists;

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[229] Vlad Alalykin-Izvekov Phenomenon of civilization: Pitirim A. Sorokin's Integralist approach and its limitations // Biocosmol. – neo-Aristot.. 2014. №3

[230] Paul Beaulieu Integral approach of Pitirim Sorokin on social realities – applicability to biocosmological studies // Biocosmol. – neo-Aristot.. 2014. №4.

[231] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p.

[232] Daffara, P. (2010). Sorokin, Pitirim, in The Oxford International Encyclopedia of Peace. Young, N. (Ed.), Oxford University Press: 781-784.

2) Temporal relationships. In studies of the values of IT specialists, temporal relationships aim to depict historical periods, circumstances, and conditions of the emergence, establishment, and development of these values;

3) Spatial relationships, i.e., the relevance of studying the characteristics of IT specialists' values in the context of different social structures of various societies (in our case - Russia, Brazil, China, America, etc.);

4) Directions of sociodynamic development of the values of IT specialists, their substantive and essential parameters, and indicators in their intrinsic meanings and in correlation with other social phenomena and occurrences.

Sociodynamics - the fluctuations of values within any social systems according to P.A. Sorokin, occur multifacetedly; however, the entire history of societal development acknowledges these fluctuations in the coordinates of polar value systems, where "two are fundamental - 'sensate' and 'ideational', and all the others are derived from them. [233]". S.I. Khudyakov determines the significance of the polar groups of 'sensate' and 'ideational' values. It should be emphasized that in the text of his work, the author himself - P.A. Sorokin - refers to these basic systems of sociocultural values as ideational and sensate [234]. These two systems of values differ fundamentally in their perception of reality: on one side are individuals whose understanding is based on what can be felt through the senses, and for them, reality is confined to the perception of the material and social environment. On the other side are those who perceive the same sensory impressions with an entirely different understanding: for them, these impressions are merely illusory or dreamlike. For them, reality is hidden beyond sensory and material layers, something beyond sensory perceptions; it's concealed from them [235].

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[233] Khudyakov S. I. Sociocultural Dynamics: Analysis of Main Theories // RUDN Bulletin. Series: Sociology. 2009. No.2. P. 24.

[234] Kasyanova E. V. "Social and Cultural Dynamics" by P.A. Sorokin and the Threat of Totalitarian Society // Scientific and Technical Bulletin of Information Technologies, Mechanics, and Optics. 2006. No.24. P. 231.

[235] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 63.

Additionally, it's essential to note that P.A. Sorokin did not consider any of these systems of values as unequivocally primary or universally true. The central heuristic characteristic of these two polar systems of values lies in the fact that they act as peculiar coordinates or limits of the range of values of different social groups, allowing the doctrinal examination of society's development as a whole: society undergoes cycles of oscillations from one value pole to another, for instance, from ideational values to sensate ones, and back again, and thus historically, one cycle of value development follows another [236]. The adequacy and vitality of the system of values of social groups are determined by the degree of conformity of these groups' ideals to one or another phase of society's development, their conformity to the infinite array of conditions and factors affecting the state of society, its social structure, and the functioning of social institutions, resulting in the formation of these values. Hence, the sociodynamics of values are conditioned by the peculiarities of the socio-economic and socio-cultural stages of societal development in specific periods [237]: "both 'sensate' and 'ideational' sociocultural systems have their own system of knowledge, philosophy, worldview, religion, ethics, art, and literature, as well as dominant forms of social relationships, economic, and political organization [238]. At each stage of historical development in society, various systems may exist, but most constitute the carriers of the dominant culture" [239].

Sorokin identified an intermediate state that lies between the "ideational" and "sensate" systems of values, which he called the "idealistic" system. In this idealistic system of values, traits and elements of both fundamental systems, namely the "ideational" and "sensate" systems, are integrated [240]. Within the idealistic system,

[236] Hart, Hornell. "Sorokin's Data Versus His Conclusions." American Sociological Review, vol. 4, no. 5, 1939, pp. 635–46.

[237] Shchompolka P. Sociology of Social Changes. — Moscow, 1996.

[238] Antonovskiy, A.Yu. (2020). Sorokin Pitirim revisited. His place in social philosophy as a transdisciplinary thinker. J. Sib. Fed. Univ. Humanit. Soc. Sci., 13(8), 1250–1263.

[239] Khudyakov S. I. Sociocultural Dynamics: Analysis of Main Theories // RUDN Bulletin. Series: Sociology. 2009. No.2. P. 24.

[240] Khudyakov S. I. Sociocultural Dynamics: Analysis of Main Theories // RUDN Bulletin. Series: Sociology. 2009. No.2. P. 24.

numerous value differences collide and coexist harmoniously. For instance, according to E.V. Kasyanova, in the values of an idealistic type society, limited pleasures are linked to external circumstances, poverty coexists with intellectual wealth, and developed spirituality intertwines with material limitations [241]. The state of contemporary Russian society remains an open question for further research; however, undoubtedly, the values of IT specialists significantly absorb and influence the sociodynamics of the Russian society, intensifying it through both "sensate" and "ideational" values.

In addition to the sensate (sensory) and opposing ideational (rational, intellectual) systems, as well as the intermediate idealistic systems of values, P.A. Sorokin indicates some other types of value systems, which are formed as non-primary transitional systems based on the interaction of four groups of factors: 1) understanding by groups of the nature of reality (the primary characteristics of reality understanding involve recognizing the primacy of material or, conversely, spiritual values, acknowledging the importance of both realities); 2) awareness by groups of the nature of their goals and needs that must be satisfied (the primacy of spiritual or, conversely, natural sensory goals and needs, simultaneous presence of both spiritual and material needs and goals); 3) the extent to which these goals and needs are satisfied by groups (maximum/minimum degree); 4) ways of satisfying them (the orientation of methods: towards self-improvement/improvement of the external environment) [242]. In the most general sense, the combination of these criteria can be represented as shown in the figure in Appendix 2.

The criterion system for analyzing values in the context of IT specialist research holds significant importance for both theory and methodology. It involves studying the relationship of IT specialists with social reality, analyzing their needs and goals, methods of satisfying these needs, and evaluating satisfaction in this process.

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[241] Kasyanova E. V. "Social and Cultural Dynamics" by P.A. Sorokin and the Threat of Totalitarian Society // Scientific and Technical Bulletin of Information Technologies, Mechanics, and Optics. 2006. No.24. P. 231.

[242] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 62.

Criterion for assessing the nature of reality. P.A. Sorokin contributes significantly to the study of values within social groups, expanding the understanding of methods and criteria for their examination. His conceptual stance, including the assessment of objective reality as a primary and crucial criterion for values, appears promising and more comprehensive compared to the approaches of other researchers[243]. Sorokin identifies three distinct approaches to evaluating external social reality by individuals. The first approach focuses on sensory and material needs associated with physical reality. The second approach emphasizes spiritual needs and interaction with the latter reality, considering the surrounding environment as an appearance. The third, intermediate approach takes into account both sensory and spiritual needs. These approaches elucidate how individuals assess and perceive the external world [244]. Thus, for P.A. Sorokin, the key criterion in the value system is the individual's definition of reality as material, spiritual, or a combination of both. It's important to note that he never adhered to idealistic or Marxist views, as emphasized by V.V. Sapov. Sorokin's scientific position is based on integralism, which can be regarded as a secularized version of the Russian idea of All-Unity, stemming from V.S. Solovyov but rooted in the works of Slavophiles and F.M. Dostoevsky. Sorokin developed the theory of integrated sociocultural systems, distinct from unintegrated formations. His theory is grounded in the principles of immanent changes and limits. Approaching any dying sociocultural system, Sorokin identifies shortcomings and flaws in both sensory stages and any other. In his view, the "Substantial Universality" constitutes the factual basis of sociocultural development, positioning himself as one of the many modifications of this foundation [245]. It can be observed that among contemporary sociologists studying values, acknowledging such significant

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[243] Jeffries, Vincent (2005). Pitirim A. Sorokin's Integralism and Public Sociology, The American Sociologist. 36(3-4): 66-87.

[244] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 63.

[245] Sapov V. V. "The Magical Crystal" of Sociology. Introduction. Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 6.

importance of the worldview regarding materialistic or spiritual elements of social reality is rather challenging to encounter.

The values of IT specialists can be seen as a result of integration between the ideational and sensory components based on the nature of reality. For instance, research conducted by N.N. Startseva demonstrates how IT specialists of different generations start their careers and how their value orientations evolve. The "senior" specialists entered the profession due to material interests, whereas the "middle" and "junior" specialists were more attracted to gaming and virtual reality, which can be considered a spiritual activity. However, over time, the initial motivations of "middle" and "junior" specialists take on a more sensory (material) character [246]. That is, as they become more proficient in their profession, specialists increasingly orient themselves towards a realistic and rational understanding of their activities, thus leaning towards sensory values. Therefore, to some extent, the values of modern IT specialists presuppose an examination of the choice between sensory or ideational values as one of the fundamental characteristics of the entire value system.

Criterion of recognizing fundamental needs and goals. P.A. Sorokin distinguishes between goals in a person's activities based on the nature of these goals. This criterion is a continuation of the previous one and helps understand what the activity is aimed at – achieving sensory (material), spiritual, or their combination. His description of goals is identical to value-goals, later mentioned by M. Rokeach as terminal values. According to P.A. Sorokin, "Needs can be purely physical, purely spiritual, or combined - physical-spiritual." [247]. In any case, the demonstrated values-goals, regardless of their content (sensory, spiritual, mixed), express the meaningful characteristics of a person's life activity goals. M. Rokeach also speaks about this, considering terminal value-goals as "the belief that some ultimate goal of individual existence is worth striving for." [248]. This is practically identical to what P.A. Sorokin

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[246] Staryova N.N. Career and Professional Models of IT Specialists: a Sociological Aspect // Discussion. 2016. No.4 (67). P. 125.

[247] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 6-7.

[248] Methodology of 'Value Orientations' by M. Rokich

defines as "The nature of the goals and needs that must be satisfied [249]". In any case, these generalizations indicate that the study and diagnosis of the values of IT specialists need to be built on an examination of value-goals that orient their activities in the digital space towards end results – realized goals.

Research shows that different social groups, such as programmers, managers, executives, and web designers, have different understandings of goals and effectiveness in their activities [250]. For instance, programmers and web designers, as IT specialists, are often oriented towards idealistic goals and see their activities as an end in itself. Meanwhile, for managers and executives in IT companies, more crucial are the end results, such as product advancement, organizational culture, and other external characteristics. This difference in goal understanding can lead to discrepancies between Russian IT specialists and foreign managers, especially in corporate environments. Managers without technical skills might evaluate Russian specialists solely based on the final product, which can create disagreements.

However, Russian IT specialists often possess a high level of qualifications and can successfully solve unconventional tasks. This can be leveraged to create quality innovations despite some disagreements in understanding the objectives of their activities [251]. Such an orientation towards goals of "internal" production, for instance, creating a software product without understanding its importance for production or commerce, can reasonably be considered as one of the varieties of the idealistic or idealist value platform among Russian specialists in practice.

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http://www.vashpsixolog.ru/psychodiagnostic-school-psychologist/69-diagnosis-emotional-and-the-personal-sphere/3101-2020-06-12-19-22-46#:~:text=М.%20Рокич%20различает%20два%20класса,является%20предпочтительным%20в%20любой%20ситуации46#:~:text=М.%20Рокич%20различает%20два%20класса,является%20предпочтительным%20в%20любой%20ситуации (Accessed: 21.07.2022)

[249] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 63.

[250] Deryugin P.P., Popov R.E., Kamyshina E.A., Bannova O.S. // "Conversion of a leader's human capital into socio-structural relations within the corporation (empirical verification) / 'Scientific Result. Sociology and Management', 2022, pp. 61-71

[251] Merzlyakov S.S. Socio-cultural features of Russian IT specialists // Labor Economics. 2020. No.11. Pp. 1051-1052."

Criterion of satisfaction of needs. This is another criterion in characterizing values introduced by P.A. Sorokin, which is actively used in other conceptual systems for analyzing values. Determining the degree of need fulfillment, satisfaction with the realization of a particular need, shows how real, significant, and important a declared value is [252]. The degree of satisfaction indicates how important a particular value is to a person. It can be high, moderate, low, etc., and primarily provides a quantitative assessment of value realization. Many researchers note that values that an individual realizes and accepts can affect motivation and life meanings in various ways, depending on each person's individual characteristics [253]. This becomes an even more relevant task for the methodology and methods of studying values since values may not be consciously recognized by their carriers, making the task of studying satisfaction even more challenging. Consequently, it can be concluded that the problem of evaluating the significance of values in the context of IT specialists becomes clearer when exploring their value sphere. To address this issue, a method has been proposed that evaluates how important values are considered and how successfully they are realized, reflecting their motivational potential. Many motivation researchers believe that the gap between the importance and actualization of values is an indicator of personal values that may not always be openly expressed for various reasons. For a deeper analysis, it is important to consider values in the context of the psychological structure of an important characteristic—initiative. This will help determine which values can serve as motivation for different types of activities. Content analysis, including analyzing speech expressions, is also valuable for understanding the meaning and content of terminal and instrumental values, which is important for a deeper understanding of their significance [254].

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[252] Nichols, Lawrence T. (2012). Sorokin as lifelong Russian Intellectual: the Enactment of an Historically Rooted Sensibility, American Sociologist, 43(4): 374-405.

[253] Lesin A.M. On the issue of students' value perceptions. In: All-Russian scientific-practical conference with international participation in memory of Academician A.V. Petrovsky 'Social Psychology and Society: History and Modernity'; October 15-16, 2019. Moscow; 2019. Pp. 144-146.

[254] Lesin A. M. Determination of Personal Significance and Content of Values // Personality in a Changing World: Health, Adaptation, Development. 2020. No. 4. P. 450

In P.A. Sorokin's concept, the way needs are fulfilled holds the same position as instrumental values in M. Rokeach's concept. However, while M. Rokeach differentiates instrumental values and specifies them as certain socio-psychological tools, in P.A. Sorokin's concept, these tools are presented in a generalized form. The main position of his concept reveals the direction of the subject's activity: towards self-improvement or towards the external environment - for changing the surrounding environment or a combined version - changing both oneself and the external environment: "They may be or appear different to different people" [255].

The specificity of IT specialists' activities lies in the constant and profound need for self-improvement, independent work on oneself. This circumstance is dictated by the fact that "there is a constant threat of a gap between the knowledge, competencies, and real needs of the industry and the economy as a whole in highly skilled IT specialists." It can be said that the majority of research on the issues of self-improvement for IT specialists lead to the conclusion: "there is a significant need for continuous development and improvement of knowledge and skills among IT professionals throughout their entire careers" [256]. Central, if not the only way of self-improvement, is self-preparation: "Self-preparation, self-learning, online education, and participation in professional certification programs already enable these specialists to acquire new and develop existing skills and knowledge to obtain successful high-paying jobs and advance their careers in this field "[257]. And if at the beginning of their career path continuous engagement with a computer and independent acquisition of new knowledge is often perceived as an exciting game, (mastering professional activity through gaming, the emergence and widespread dissemination of persistent

[255] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 64

[256] Vodopyanova N. E., Zhurina M. A. Features of the Value-Motivational Sphere of IT Specialists // Bulletin of Kostroma State University. Series: Pedagogy. Psychology. Sociokinetics. 2020. No. 2. P. 39. July 23, 2022

[257] Vodopyanova N. E., Zhurina M. A. Features of the Value-Motivational Sphere of IT Specialists // Bulletin of Kostroma State University. Series: Pedagogy. Psychology. Sociokinetics. 2020. No. 2. P. 39. 23.

independent work. Another aspect of the problem lies in the inability to influence the external environment, limited self-realization in the sensual variant of self-realization.

I.M. Kozina and E.V. Seryozhkina conducted a comparative study of Russian and French IT specialists regarding the factors causing stress in the workplace. Regarding the potential to influence the external environment, identical results were obtained regardless of the country where the IT specialists work: IT specialists in both Russia and France lack the ability to realize their potential in influencing the environment. They point out that many employees in modern corporations find themselves in situations of double constraints. On one hand, they are required to work very promptly, and on the other hand, they need to avoid mistakes, adhere to established rules, and limit their autonomy. This leads to increased tension and decreased interest in work. Employees start feeling more like "cogs in a machine" rather than unique specialists. Their words reflect routine and underutilization of their skills and abilities. Routine work, despite the low demands on the worker, does not match the perception of the profession as something expert and creative. They feel that they spend most of their time performing repetitive tasks and, as a result, begin to feel monotony and underdevelopment of their abilities. When there's no possibility to change the situation, this becomes an additional source of stress and tension [258]. The empirical conclusion that modern IT specialists find themselves in a situation where they "actually exist in a situation of double constraints" becomes not just a limitation for realizing their professional potential but also one of the stress-inducing factors. In any case, the social consequences of their professional activity, consisting of the impossibility to improve or change the social environment for IT specialists, have purely human, purely psychophysiological consequences - they become causes of stress.

The mentioned types of values do not encompass all their variants and forms. P.A. Sorokin specifies these types of values when discussing seven kinds of values,

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[258] Kozina I. M., Seryozhkina E. V. Production Factors of Stress in the Work of Russian and French IT Specialists // Sociological Studies. 2019. No. 5. P. 32.

combining, and developing various combinations of basic values - perceptions of reality, fundamental goals and needs, the degree of satisfaction, and methods of satisfying needs (Appendix 3).

In scientific literature, the types of other values characterized by P.A. Sorokin are discussed much less frequently. These include values formed on several principles: the relationship between being and becoming - recognizing the importance of eternal values of being and/or the emergence of new (transient) values; the relationship between power and control - self-control and suppression of emotions and/or control over sensory reality; types of activity - introverted and/or extraverted; holistic and/or differentiated perception of self; direction of knowledge - spiritual and/or technical; understanding of truth - internal experience and/or external observation; moral values - imperative and/or relative; aesthetic values - non-sensory and/or sensory; social (practical) values - enduring, elevated and/or concrete, principles of rational egoism. The combination of these characteristics allows for a sociological analysis of the values of socio-professional groups. In P.A. Sorokin's concept, the integration character and socio-dynamics of the development of social groups and society as a whole are revealed in the aggregate of different characteristics of these types of values [259].

In any case, it should be emphasized again that Sorokin's research reveals a picture of current fluctuations between what he calls "sensate" and "ideational" value systems. In the sensate period, a materialistic worldview dominates in all aspects of life, and economic and scientific activities thrive, especially during the "active" sensate phase. The "passive" phase is characterized by hedonistic values, while in the concluding "cynical" stage, sensory thinking negates everything, including itself. Ideational periods, on the contrary, have a spiritual orientation, and social relationships take on a familial rather than contractual character. Ideational periods transition from

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[259] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 78-81.

"ascetic" to "active" (expansionist) mentality but eventually degenerate into "fideism" (desperate will to believe) [260].

The system of typology of values in different social groups can be briefly presented through the following basic characteristics.

Social groups with ascetic-ideational values. Their foundation is comprised of spiritual needs. Specifically, categorical, imperative, eternal, and immutable truths are attributed to moral values. Social and practical values constitute enduring spiritual foundations and are expressed in a pursuit of spiritual, often intellectual, leadership. Knowledge here is understood as a focus on immaterial phenomena, the understanding of spiritual principles, and psychological phenomena. The pursuit of truth is based on internal experience, meditation, and intuition. Such groups are most often associated with religious contexts.

Social groups with active-ideational values. Their activities are somewhat connected to material reality, but the emphasis is still placed on the eternal and non-sensory. Their needs are primarily spiritual, although there is room for material needs. Members of such groups exhibit high self-control and are predominantly introverted. They perceive their selves primarily as a spiritual entity, which aligns with how they evaluate knowledge, mostly directed toward analyzing spiritual principles. Consequently, moral and social values, mainly comprising values of the non-material world, are relevant to them.

Social groups with pseudo-ideational values. Their activities are torturously sensory, felt but not rationalized. Their real needs are unfulfilled, primarily sensory but undifferentiated. They simply "endure" the surrounding environment and external pressures. Their activity is compelled and fatalistic. The unintegrated self is only revealed as a vague center of sensations. Their knowledge is fragmented, and truth is unknowable. Moral, social, and aesthetic values for this group are vague, undifferentiated, and oriented toward external demands dictated by the environment.

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[260] Vlad Alalykin-Izvekov Phenomenon of civilization: Pitirim A. Sorokin's Integralist approach and its limitations // Biocosmol. – neo-Aristot.. 2014. №3.

Social groups with idealistic values. It's crucial to note idealistic values as those that "lie between" the demonstrated fundamental poles of values—sensate (sensory) and ideational values. P.A. Sorokin emphasizes the integrated nature of these values. "This is the only form of a mixed type that is - or at least appears to be - logically integrated" [261]. These are the values of groups whose activities are linked both to real objects and ideal phenomena. Their needs also relate to both material and scientific (spiritual) realms of activity. Equally characteristic for members of these groups is both self-improvement and the improvement of the surrounding reality. In their self-portrait, they see both sensory and spiritual aspects, which is also typical of the knowledge they acquire and the pursuit of truth. Moral, aesthetic, social, and professional values encompass both spiritual and material elements. Often, their main motto is "live for yourself and let others live" [262].

Social groups with actively sensual values. The needs of such groups are centered around comprehending empirical-sensory phenomena, and their primary goals are entirely rational and pragmatic. They are predominantly extroverted. Their activities are entirely focused on changing social reality and the surrounding environment. These groups are highly productive, results-oriented, professionally cohesive, striving to materialize their spiritual and intellectual potentials. The participants' knowledge is scientific, related to technology and techniques aimed at enhancing human capabilities. Most likely, such groups manifest as active groups in production settings.

Social groups with passively sensual values. Their activity is material, limited, and superficial. Their primary needs are purely material, the satisfaction of which constitutes the main goal, achieved based on utilitarian exploitation of the external environment. Self-control over themselves and the external environment is absent. Their activity is parasitic. Their selves do not exhibit any integrity, a simple mix of

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[261] Sorokin P.A. Social and Cultural Dynamics. Astrel, 2006. - 1176 p. P. 67.

[262] Simpson, Richard L. "Pitirim Sorokin and His Sociology." Social Forces, vol. 32, no. 2, 1953, pp. 120–31.

sensations, identical to an animal, a sexual organ. Their knowledge is directed toward mastering "culinary" and "sleeping" techniques. There is no truth except sensations. Social, moral, and aesthetic values are absent - amoralism and nihilism prevail.

Social groups with cynically sensual values. Reality is perceived as a material world hiding behind a mask of spirituality. The needs of individuals in this group are also the same. Purely external, superficial psychosocial presentation to the external environment and its actual utilization. Pretense and control, switching masks depending on the situation. Their activity is situationally introverted-extraverted. The self is divided, intriguing, and manipulative. Knowledge is aimed at studying deception, manipulation techniques, and hypocrisy. There is no pursuit of truth. Social, moral, and aesthetic values are mostly sensory-material, disguised as spiritual. Cynicism and nihilism characterize them.

P.A. Sorokin proposed a concept that during the transition of civilization from one "supersystem" to another, there is a tumultuous transitional period. In such periods, there is intensified intensity and scale of wars and revolutions, as well as general social disorganization, including increased crime and mental illnesses, decline in the institution of family, and other changes. According to his "law of polarization," these periods see an intensification of violence and selfish behavior, but there is also a balance with the rise of altruistic behavior, such as love, self-sacrifice, and mutual aid.

These transitional periods are also associated with an increased role of government and more coercive measures by authorities. Nonetheless, sometimes there is a blending of the best elements from two "supersystems" - faith, reason, and empiricism. These "idealist" periods usually appear short-lived, but they can leave a significant impact.

In the context of the Russian situation, the departure of some IT specialists to other countries can be interpreted as an inadequate reaction and a lack of understanding of the prospects of ongoing changes, driven by the desire to seek better opportunities

and living conditions [263]. Based on the results of numerous studies of the socio-psychological profile of IT specialists, it can be concluded that a small portion of respondents exhibit a "sense of detachment of informants from the 'real' and social worlds, as all their interests lie in the virtual realm" [264]. Indeed, for some members of the social-professional group of Russian IT specialists, values associated with sensory order - such as the aspiration to transform the external environment - are rarely encountered. Instead, they are predominantly characterized by ideational values closely related to the realm of virtual space. The main differences here do not so much lie in the virtual sphere of shaping values but in the substantive characteristics of these values. What are the differences between these values?

According to the analysis by E.V. Kasyanova, P.A. Sorokin wrote his texts in English, and the term "ideational" is difficult to precisely translate. The meaning of this term almost coincides with "ideological," as asserted by Kasyanova. Within ideational cultures, one can include spheres where a religious system of values predominates, political parties, social organizations, and others. One of the key characteristics of such social groups is their orientation toward the future rather than the present. Consequently, representatives of these groups are often motivated by the idea of saving the soul, religious fervor, and a willingness to forsake current interests in favor of the future. According to Sorokin, such tendencies are manifested in religions such as Brahmanism, Buddhism, Christianity, as well as in Marxism [265]. Therefore, it can be argued that the set of ideational values, which reflect the ideological positions of a group, are expressed in systematic-conceptual ideas of worldview order, i.e., the interests of political sphere subjects (classes, political parties, social movements), sharing paths of conservative or radical change (or support) of power.

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[263] Vlad Alalykin-Izvekov Phenomenon of civilization: Pitirim A. Sorokin's Integralist approach and its limitations // Biocosmol. – neo-Aristot.. 2014. №3.

[264] Kasyanenko I., Alabin A. 'IT Specialists' as a Modern Professional Group // INTER. 2017. No.14. P. 102.

[265] Kasyanova E. V. 'Social and Cultural Dynamics' by P. A. Sorokin and the Threat of a Totalitarian Society // Scientific and Technical Bulletin of Information Technologies, Mechanics and Optics. 2006. No.24. P. 231.

The examination of ideational values implies the identification of a whole range of aspects, but for the current study, it's pertinent to focus on the political and professional aspects. Regarding the political aspect, some Russian IT specialists may be associated with groups whose views minimally touch upon the values of any ideological meaning. Conversely, concerning political parties, they are interested in meticulously studying, tracking, and analyzing the political values of IT specialists. The reasons for such attention are quite understandable; they demonstrate that the professional capabilities of this group of specialists, involving the ability to influence the socio-political landscape, are highly significant. Moreover, among the groups of IT specialists, naturally, there might be individuals who share various fundamental political views [266].

I'll refer again to the findings of E.V. Kasyanova, who emphasizes: "The very concept of ideational culture logically implies that, barring any external circumstances, in such cultures, power, intellectual-moral, and societal authority are held by those individuals and groups (whom one can label as the 'aristocracy') who embody ideational values or are assumed to do so. The highest prestige and authority, hence, political weight in such societies, should belong to the theocracy - be it a caste of priests or clergy, the Brahmin caste, lamas, shamans, 'elders,' or any other group of people who, according to beliefs, are in the closest contact with the supernatural force and values, serving as its trusted representatives in the sensually perceived world." Ultimately, the development of ideational (often identical to ideological values) not only stabilizes social life but, in perspective, these values may even harm the primary rational component of socio-economic development, hinder scientific progress, technological advancement, and ultimately, impede economic development and the

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[266] Why are IT specialists in opposition and leaving? URL: https://zen.yandex.ru/media/literatur/pochemu-it-specialisty-u-nas-v-oppozicii-i-begut-624958ab85d9f108cc6ecf1e (Accessed: July 24, 2022)

realm of material values [267]. Moreover, in societal relationships within the ideational system of social values, elements such as openness, unconventional scientific and technical discoveries, materialistic worldview, deterministic concepts, dynamism in social life, diversity of aspirations and interests - in short, everything that characterizes the 'sensory' (sensitive) value system, which conflicts with ideational values, and constitutes their opposite, gets suppressed or disappears. All that is vital for the socio-professional group of IT specialists is suppressed or vanishes. However, as demonstrated, the world of material values constitutes a significant part of the value system for Russian IT specialists.

The professional aspect of ideational values is crucial for conducting the empirical part of our study. As evidenced by research results, the sociodynamics of Russian IT specialists' groups significantly amplifies through distinctive ideational values. According to P.A. Sorokin's concept of sensory culture, which disregards ideational reality and its values, leaders and managers can only emerge from groups that create, preserve, and embody the highest significant material values. These leaders play the role of robust guarantors of security and stability, ensuring the material prosperity of the society. In such a culture, aristocrats can be represented by the military, the wealthy, various dictators with their supporters, skilled politicians and strategists, organizers of new economic and other empires, scientists, and inventors dealing with the "material forces of nature," unveiling new sources of mankind's material well-being. This list also includes various fraudsters, "bosses," and even leaders of criminal organizations [268]. The dominance of sensory values carries its risks. Due to these reasons, under the pressure of sensory values, society starts stagnating, languishing, and degrading, which prompts a revival of ideational values. It initiates a new phase in sociocultural development.

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[267] Kasyanova E. V. 'Social and Cultural Dynamics' by P. A. Sorokin and the Threat of a Totalitarian Society // Scientific and Technical Bulletin of Information Technologies, Mechanics and Optics. 2006. No.24. P. 233.

[268] Sorokin P.A. Social and Cultural Dynamics. St. Petersburg, 2000. P. 5, p. 50.

For Russian IT specialists, ideational characteristics of the value system are significant, such as respect for scientific and abstract knowledge, along with a drive towards technical and technological knowledge. They also orient themselves towards faith in observation and experimentation as primary means of understanding nature. However, Russian IT specialists also appreciate material and utilitarian values, and their moral convictions might be influenced by the morality of "rational egoism." Their aesthetic values could be secular, associated with enhancing joy, beauty, and wealth in life. They also value social and practical aspects like wealth, comfort, money, and prestige. Therefore, Russian IT specialists show an interest in both ideational and sensory values, implying not only theoretical exploration of these trends but also their empirical verification in reality.

The main characteristics of IT specialists' values derived from the concepts of P.A. Sorokin, relevant to their contemporary sociological studies, are vital to emphasize?

Firstly, it's evident that the social-professional sphere of IT specialists today acts as a factor of societal differentiation, resulting in the emergence of new social systems of status ranking and privileges [269]. These values bear a social nature; their influence accompanies the rise of social distinctions, particularly digital ones, and their hierarchies are shaped by the digital realm;

Secondly, these values belong to "mixed" values, i.e., they are "combined," "interconnected" values where ideational and sensory elements are logically integrated. Sensory and ideational elements coexist in varying proportions, merging material and spiritual understanding of contemporary reality within the values of this social-professional group;

Thirdly, the fusion of scientific-objective knowledge with elements of understanding non-material world occurrences remains relevant to the activities of

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[269] Ponomarev V. A. Transformation of Social Structure in Modern Russia // Humanities and Social Sciences. 2007. No.6. P. 74-75.

Russian IT specialists. It stands as one of their central characteristics as a professional group;

Fourthly, the values of Russian IT specialists involve combining methods of self-improvement with methods of transforming the external environment to fulfill their needs;

Fifthly, as emphasized by P.A. Sorokin, the investigation of a specific social group or individual cannot unequivocally transfer the generalized characteristics shown to a particular case. "In the concrete social reality, none of the mentioned types - in an individual, group, or culture - exists in a pure, unadulterated form without being mixed with other types. On the other hand, these types and their characteristics are not uniformly distributed" [270]. This position warns against generalizations from individual observations or analyzing specific cases and extrapolating conclusions onto the entire social-professional group of IT specialists;

Sixthly, the three phases of sociocultural development - ideational, idealistic, and sensory - do not merely replace each other. Instead, they never disappear, none of them ever do. Only a change in dominance occurs, the prevalence of values in the overall culture of any group. However, shifting priorities entail a reorganization of their socio-cultural space, potentially inciting a "fierce struggle among interested groups of people" [271].

A separate focus deserves the discussion of idealistic values. In our view, the existence of social-professional groups of Russian IT specialists with idealistic values is rather unlikely due to the short period of existence of such groups and the peculiarities of the socio-economic development of Russian society in recent times (crises, sanctions, restrictions).

According to the conclusions of P.A. Sorokin, the dominance of idealistic attitudes has always been short-lived and quite rare. However, this does not diminish

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[270] Sorokin P.A. Social and Cultural Dynamics. St. Petersburg, 2000. P. 68.
[271] Mulyar E. A., Pristav E. S., Skorokhod A. S. The Concept of Cultural Development by P. Sorokin // Tsarskoye Selo Readings. 2016. No. XX. P. 142.

the role and significance of such groups and their values; on the contrary, the values of such groups are extremely important: "Despite the comparative rarity of this type of mixed mentality, its contribution to world culture is very high"[272]. P.A. Sorokin draws attention to the diversity of cultural types and systems of values in society, presenting idealistic values as one of the variations of mixed value systems. He points out that idealistic values, according to his definition, are quite rare among other varieties of mixed mentalities. Mixed types of social groups, according to P.A. Sorokin, are characterized by the predominance of sensory elements in their system of values. These groups value comfort, pleasure from entertainment, including food, games, and sex, provided that it occurs within reasonable limits. They also observe rules of decency and etiquette, fulfill their duties, including charitable activities, and participate in religious events. Thus, P.A. Sorokin presents the diversity of value systems in society, highlighting idealistic values as less common but nonetheless important components of cultural types and systems of values[273].

Turning to the study of IT specialists' values, one cannot overlook some modern features of their analysis that complement and expand upon P.A. Sorokin's fundamental principles. Primarily, this concerns the influence of the digital, technical, and technological components significantly shaping the value system of Russian IT specialists. Based on digital, technical, and technological values, professional stratification is formed, which Sorokin classified as one of the "key" types of stratification[274]. Specifically, reference should be made to the conclusions of V. Bülay, who demonstrated the evolution of European values under the influence of new technologies[275]. Similarly, new technologies, reflecting scientific and sociocultural achievements of society, provide the opportunity for economic activity for several decades before their impact becomes obsolete. Thus, socio-cultural parameters within

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[272] Sorokin P.A. Social and Cultural Dynamics. St. Petersburg, 2000. P. 93.
[273] Sorokin P.A. Social and Cultural Dynamics. St. Petersburg, 2000. P. 83.
[274] Nikolenko N. A. Professional Stratification as a Social Phenomenon: Theoretical Approaches and Research Methods // Logos et Praxis. 2014. No.6. P. 44.
[275] Byul V.L. Cultural Change: Towards Dynamic Sociology of Culture // Foreign Social Sciences. — 1989. — No. 3.

the economic complex generate internal fluctuations that drive further development of the entire system [276]. According to N. Kondratiev's concept, society's development is marked by three phases with distinctive inherent values [277]. The first phase activates progressive values and the struggle against authorities. The second phase is characterized by passivity, narcissism, aggression, and terrorism due to economic activity disruptions. The final phase brings about depression and the pursuit of peace and security, accompanied by a quest for new technical means to influence social development. The technical aspect of IT specialists' activities plays a pivotal role in shaping their values and complements P.A. Sorokin's theory with methodological conclusions.

Furthermore, the most significant influence on the sociodynamics of values among Russian IT specialists is the mutual influence of their colleagues with whom they interact within the IT space. In his early formulation of the fundamental principles of sociology as a science, Sorokin draws out the key problems of social order, viewing its subject as "interactions between people." While the focus is on human relationships, the individual as an acting and interacting entity takes a backseat in this concept. The conceptualization and theoretical priority are given to the "category of inter-human relations" [278]. Without such mutual influence, the value system of IT specialists forms as weak and dependent within a limited space. Conversely, the value system of the social-professional group of IT specialists as a strong cultural environment will be characterized by expansion and active dissemination within the IT sphere, uniting adopted standards within its environment and borrowing all that is new and advanced from other environments. Such an environment represents a distinct socio-cultural

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[276] Khudyakov S. I. Sociocultural Dynamics: Analysis of Key Theories // RUDN Bulletin. Sociology Series. 2009. No.2. P. 25.

[277] Kondratiev N.D. Problems of Economic Dynamics. — Moscow, 1989.

[278] Antonovskiy A. Yu., Barash R. E. 'The System of Sociology' by Pitirim Sorokin and the System-Communicative Approach // Monitoring. 2021. No.6. URL: https://cyberleninka.ru/article/n/sistema-sotsiologii-pitirima-sorokina-i-sistemno-kommunikativnyy-podhod (Accessed: August 25, 2022). Sorokin P. A. The System of Sociology. Petrograd: Publishing Partnership 'KOLOS', 1920. P. 8.

formation, as a "multilevel system stemming from a simple polar construction, namely, from the diametrical opposition of fluctuating symbolism on one side and genetically fixed behavioral program on the other" [279]. Likely, deep immersion in the digital environment, driven by active participation in it and possessing the necessary skills to master it, contributes to the formation of a unique sense of belonging. This feeling is probably sought precisely in virtual reality, where people can fully realize their belongingness. Research indicates that participants, usually reserved in real-life interactions, spend significant time interacting online through text messages and video calls. Perhaps, in the virtual space, they feel more confident, considering it their personal territory. Consequently, their lack of interest in the real world, where not everything is controllable and where intervention or rebooting something is not always feasible, becomes understandable. In this context, their reluctance to interact with the real world becomes apparent and might even create some form of "virtual" identity, beyond just their professional one [280].

According to P.A. Sorokin, a personality is considered a holistic system comprising the following components: behavioral characteristics reflecting ways of social interaction and an individual's attitudes toward the state, the development of society, and culture; activities related to creativity and the creation of cultural phenomena, employing a diverse set of personal characteristics including rational, super-sensory, and professional aspects; a spiritual and moral resource contributing to society's revival during crises, formed through the accumulation of constructive altruism and continuous moral refinement [281]. Within the scope of these ideas, the examination of the sociodynamics of values within the social-professional group of IT specialists is pertinent. It manifests as one of the particular macro-psychological traits (variables) among the participants of this group, forming independently of the

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[279] Byul V.L. Cultural Change: Towards Dynamic Sociology of Culture // Foreign Social Sciences. — 1989. — No. 3. P. 142.

[280] Kasyanenko I., Alabin A. 'IT Specialists' as a Modern Professional Group // INTER. 2017. No.14. P. 103.

[281] Oganyan K. K. Methodology of Integral Personality Theory // Sociology and Law. 2016. No.4 (34). P. 64.

economic nature—be it capitalist or socialist—but corresponding to the post-industrial type of societal structure, as De Green believes. According to his perspective, this arises from the combined efforts of various social groups, increasingly interconnected due to informational and transportation communications, shared technologies, as well as common models of upbringing, education, culture, economic, and political activities[282]. In the author's view, throughout the formation process of phases of prosperity, decline, depression, and recovery, nine macrosociological variables transform: 1. perception of direct threat; 2. perception of favorable opportunity; 3. creative activity; 4. education; 5. anxiety; 6. propensity for risk; 7. social motivation and morality; 8. alienation and decline of morals; 9. values reflecting systems of significance characteristic of a particular phase of societal development. These values are classified as cosmopolitan, conservative, economic, and conflictual (Fig. 1.2.1).
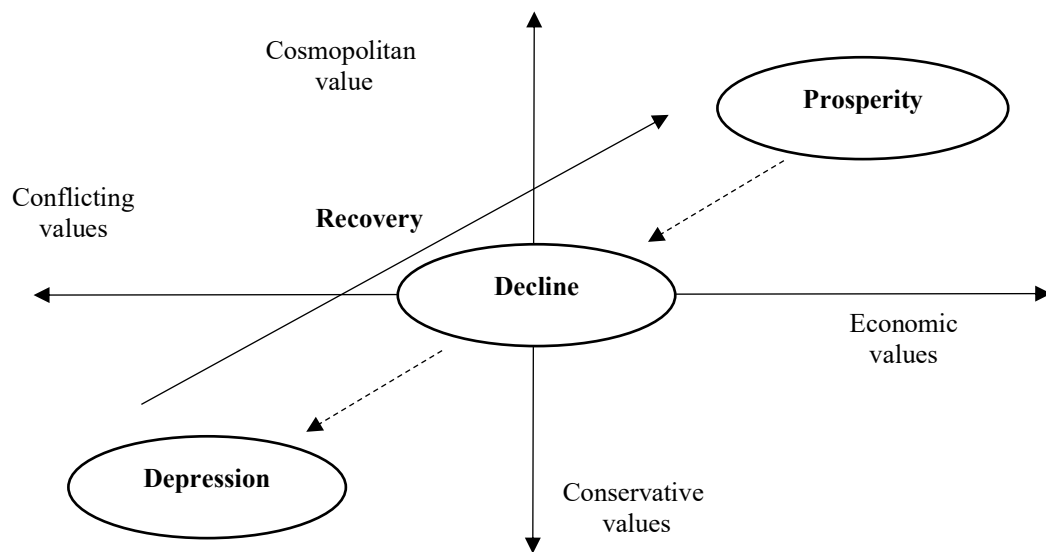
Fig. 1.2.1 Sociodynamics of post-industrial society development in the value system coordinate according to (De Green) (Compiled by the author)

Cosmopolitan values point to a tendency to change the existing order, reduce patriotism, and strengthen global citizenship. Meanwhile, conservative values indicate a desire to return to origins, intensify the protective aspects of society, and distrust

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[282] Khudyakov S. I. Sociocultural Dynamics: Analysis of Key Theories // RUDN Bulletin. Sociology Series. 2009. No.2. P. 25–27.

innovations. Economic values embody a pragmatic approach aimed at accumulating wealth and benefits. Finally, conflicting values express disillusionment with economic development, inequality, environmental issues, and other aspects, which may lead to heightened conflicts and a quest for a more equitable distribution of goods in society[283].

Thus, according to De Green's perspective, in a post-industrial society, prosperity and prospects are ensured by those social-professional groups whose values can be defined as a combination of economic and cosmopolitan values. These values emphasize economic rationality and efficiency, combined with strengthening the identification as "global citizens." This ideal model reflects the general contours of value development in post-industrial society, where IT groups play a significant role. A. Mole emphasizes that in today's world, sociodynamics observes a shift from the customary "humanitarian culture" of industrial societies to a more diverse "mosaic culture" in post-industrial and information societies [284]. A. Mole points out that the "humanitarian culture" is usually characterized by a rigid hierarchy, whereas the "mosaic culture" possesses a more networked nature, representing a kind of "sociocultural mosaic," where elements are chaotically mixed. Consequently, no model of sociocultural influence is realized in pure form, and each creates its unique "contour" in sociocultural interaction, thereby defining the character of a highly specific cultural development [285].

The analysis conducted allows us to assert that in the context of P.A. Sorokin's ideas, the values of the social-professional group of Russian IT specialists should be regarded as values of an integrative order, meaning values that combine orientations both towards spiritual and material bases in understanding and evaluating reality[286].

[283] Hudyakov S. I. Sociocultural Dynamics: Analysis of Key Theories // RUDN Bulletin. Sociology Series. 2009. No.2. P. 25–27.

[284] Mol A. Sociodynamics of Culture. — Moscow, 1973.

[285] Hudyakov S. I. Sociocultural Dynamics: Analysis of Key Theories // RUDN Bulletin. Sociology Series. 2009. No.2. P. 28.

[286] Market Orientations of Human Capital of Sociology Students in the Digital Educational Environment: Research Results / P.P. Deryugin, S.V. Panov, K. Salfetnik, A. Salahutdinov, Y. Yui // XV Kovalevskie Readings All-Russian Scientific Conference, St. Petersburg, November 25–27, 2021"

For the value system of Russian IT specialists, a proportional perception of the spiritual and material bases of societal life is characteristic, and a "golden mean" is possible as a harmonious measure in assessing the roles of spiritual and material foundations of life activities. Another essential component of the value system of Russian IT specialists is the sensory component, which reveals the material aspect of this system. In this case, this fact indicates the insufficient realization of material needs and goals among Russian IT specialists, the presence of unsatisfied utilitarian interests and goals among them, and the aspiration to improve their economic status.

A certain portion within the value system of Russian IT specialists, ideational values, confirms that despite distinctive characteristics like high scientific orientation and working in virtual spaces, this social-professional group is minimally dependent on socio-political and ideological engagement. These professionals aim their professional activities toward achieving globalization goals. On the other hand, the affiliation of IT specialists with the specific Russian society implies their integration into the system of needs, goals, and interests of Russian society, which might be perceived by IT specialists as an important ideological and patriotic stance.

The formation of values within the social-professional group of Russian IT specialists represents a sociodynamic process involving the emergence, establishment, and adoption of elements within professional activities. These elements become the basis for determining the importance, significance, utility, and usefulness of any social phenomena or occurrences, forming the basis for selecting alternatives for interaction among IT specialists both within the internal IT professional environment and when interacting with the external environment. Acknowledging the priority of the needs and interests of the digital society significantly serves as the foundational basis for the professional-value choices of IT specialists when assessing the importance and significance of material and spiritual realities, the fundamental needs and goals of their activities, and choosing the means and extent to realize these needs in the interest of achieving the goals of Russian society.

1.3 System-Process Characteristics of the Sociodynamics of Integrating Values of IT Specialists

Since the establishment of society and the formation of its initial models of understanding, the concept of values has been at the core of conceptual constructs both theoretically and practically. This conclusion is drawn based on the results of the study of the origins of value theory in sociology by the contemporary researcher A.S. Ryndina [287]. Specifically, the theoretical and empirical understanding of IT specialists' values confirms that not every new socio-professional group alters the value landscape and society itself, but only those groups whose activities are imbued with meaningful values essential for the significant development of society. A. Toffler has repeatedly pointed out the substantial influence of the values of emerging socio-professional groups on the transformation of industrial society, revealing how new industrial groups evolve into new social institutions and catalyze many social processes in the contemporary world. Human influence on the direction of technological development aligns not only with economic and social needs but also with social value orientations. Changes occur in society, arising from technological advancement, and corresponding changes in the technosphere: creative and intellectual potentials become the primary value, replacing material and tangible ones. Values, in fact, constitute the core of the most significant guiding components in political, economic, social, technical, and informational spheres of activity. The values of professional groups impact not only the direction of technological development but also, in accordance with economic and social needs, they influence the social value orientations of many other individuals [288].

The values of IT specialists inevitably influence the formation of the modern information society. In particular, the values of this group of corporate employees significantly shape the digital space in Russian society, impacting both its economic

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[287] Ryndina A.S. Origins of the theory of values in sociology and directions of its development // Vestnik RUDN. Series: Sociology. 2021. №3. C. 590.

[288] Toffler, Alvin. 1980. The Third Wave. New York: William Morrow.

and social spheres. This influence stems from the importance of values characteristic of leading groups in the process of changing the social structure of modern Russia.

The facets of existential value of values are numerous. However, first and foremost, values should be considered as the key basis for interaction between an individual and society, as emphasized by T. Parsons [289]. In sociology, the existential meaning of values in the life of an individual and society is associated with several values:

- Values are viewed as the source of all personal actions, not merely as the conscious relationship of an individual to life in society, but as a vital necessity for actions that alter the external world while also being personal actions [290]. Consequently, the personal values of IT specialists should be regarded as a prospective resource for future exploration of the socio-economic space, not only in terms of goals and technology, but also as actors in new social roles and realities, new forms of human relationships. The formation of the personal values of IT specialists accompanies two significant socio-psychological processes: socialization and internalization [291]. In this context, the process of socialization, according to Talcott Parsons' theory, represents the way an individual internalizes values, beliefs, language, and other symbols from the cultural system. This process of transferring "patterns" from societal culture into the individual's internal system is also referred to as internalization. Thus, a socialized individual becomes one who has integrated societal norms of behavior and has become an active participant in social interactions. This implies that the personal system not only needs to incorporate societal norms and values (and discern when and how to

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[289] Yarina E.V. Theoretical analysis of the concepts of "values" and "value orientations" // Academic notes of OSU. Series: Humanities and Social Sciences. 2014. №5.

[290] Kokoeva R.T. Actual problems of existential categories in modern psychology // Fundamental Research. 2014. № 6. C. 1307-1309.

[291] P. P. Deryugin, O. S. Bannova, Values of students of different training profiles in the conditions of digitalisation of society: results of an empirical study// Discourse. - 2022. - № 5. - C. 68-80

breach them) but also is capable of managing and suppressing its own motives and values, thereby shaping its own image or self-representation in the eyes of others [292];

- Conscious and subconscious foundational existential needs, such as "life as a whole," "anxiety," "fear," "meanings of life," "unity and indivisibility of life," "solitude," "death," and others [293], serve as internal driving motives not only for establishing multifaceted relationships of IT specialists with people from other social groups, stakeholders of the organizations they work for, but also, in general, based on values, socio-professional groups of IT specialists are formed within the digital space[294]. It's important to note that unlike other distinctive and unique characteristics of IT specialists as individuals, values act as a unifying element: "According to Parsons, 'Personality' is a combination of conscious needs, requests, and preferences of individual subjects, each of which is unique, although they speak the same language and share some common cultural values' [295];

- Values serve as the foundation for successful/unsuccessful self-realization. As emphasized by É. Durkheim, values ensure every individual's self-realization and are invariably embedded in the sociocultural context, expressing social meanings and social interests [296]. Therefore, it is legitimate to assert that the values of IT specialists are part of that culture in the broadest sense, which they will perceive and reproduce as their own, constantly seeking the most adequate conditions for their self-realization.

Thus, the professional values of IT specialists can rightfully be characterized as foundational formations upon which a new type of society is shaped – the digital society. The values of IT specialists are simultaneously shaped as the values of socio-professional groups and individual personalities: "Social-professional reproduction is

[292] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. C. 19.

[293] Yalom I. The Cure for Love. Psychotherapeutic novellas. M., 2001.

[294] Katarzyna Toskin & Richard V. McCarthy (2021) Information Technology Work Value Differences, Journal of Computer Information Systems, 61:4, 305-313

[295] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. C.11.

[296] Durkheim E. Value and "real judgements" // Sociological Studies. 1991. № 2. C. 106-114.

not limited to reproducing the numbers of the respective groups but is also the reproduction of a set of specific social and cultural qualities necessary for the normal participation of an individual as an actor in the functioning and development of the economy and society" [297]. This reproduction influences the entire social structure. Particularly, according to V.A. Mansurov and O.V. Yurchenko, in modern Western studies, professionals are regarded as an "interest group," which restricts access for other ordinary professional groups with low status to certain market privileges and social benefits, while also actively participating in managing various sectors alongside the state. By merging domestic and Western approaches, it's possible to explore both altruistic and selfish interests of contemporary professionals in the context of their socially significant activities [298].

The professional values of IT specialists, viewed as the immediate subject of sociological research, possess numerous merits. Polish sociologist J. Szczepanski particularly emphasized that "the subject of sociological research consists of phenomena and processes of various forms of human coexistence, the structures of different human communities, the phenomena and processes occurring within them resulting from the interaction of people, forces that unite and break these communities, changes and transformations taking place within them" [299]. In our view, values as the subject of sociological research encompass all the merits necessary for achieving such goals.

The significant importance of values in sociological research is determined not only by their previously mentioned existential meanings. As rightly emphasized by R.T. Kokoyeva, fundamentally, the sociological interpretation of values allows for the identification and disclosure of the meanings of human existence for any socio-professional group, the motives of their existence, their endless social interconnections,

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[297] Yastrebov G. A. Reproduction of socio-professional groups in modern Russia // The World of Russia. Sociology. Ethnology. 2009. №2. C. 118.

[298] Mansurov V.A., Yurchenko O.. V. Sociology of professional groups: history of formation and prospects // Bulletin of the Institute of Sociology. 2013. №7. C. 101.

[299] Cited by Ilyin I.A. Pro et contra. Personality and creativity of Ivan Ilyin in memoirs, documents and assessments of Russian thinkers and researchers. SPb., 2004. C. 8-9.

and interactions between individuals and others: values reveal the peculiarities of activities and communicative spaces of any community [300]. More precisely, values reveal the nature of interaction between IT specialists and society, indicating how their personal aspirations, ideals, and interests, as a new social group, align with established goals and needs of other people and society as a whole, how cohesive or conflicting they are with the values of other participants in social interaction, with other socio-professional groups, against which they adjust their values or subordinate them to their own values: "Indeed, on the one hand, a person is subject to the objective laws of social life and is not free to choose a social system; on the other hand, they subordinate their actions to their own values and goals," notes G.S. Batygin [301]. Therefore, the analysis of the values of IT specialists as a subject of sociological research is aimed at identifying the nature of the numerous relationships and connections with other social groups and communities, the society at large [302].

Several fundamental aspects are crucial for considering the values of IT specialists as a subject of sociological research. Among the pertinent aspects of such research are: a) modeling values; b) the basic principles of studying the values of IT specialists; c) identifying the specifics of professional values of IT specialists as an object of study in sociology.

Modeling. Modeling involves the abstract construction of the object of research, enabling the study of this object in its fundamental characteristics and properties. For the purpose of constructing such a model, we have focused on the essential characteristics of values that reflect their various aspects (Appendix 4).

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[300] Kokoeva R. T. Existential value in its sociological aspect // Health and Education in the XXI century. 2016. №7.

[301] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. C. 9

[302] Deryugin P. P., Lebedintseva L. A., Sivokon M. V., Kamyshina E. A. Career trajectories of managers of large Russian corporations in the digital era: educational context // Information-Communication-Society. A. Career trajectories of managers of large Russian corporations in the digital era: educational context // Information-Communication-Society. 2019.T. 1. C. 60-67.

Analysis shows that depending on the research objectives, values can be considered from various positions and aspects. This reflects their interdisciplinary nature as an object of study and their multidimensionality as a model. To summarize the presented material, it can be observed that values are viewed from the perspective of essential characteristics (the properties of something), as phenomena (sensory, rational), as objects (spiritual, material), as temporal parameters (future, past, present), as elements of a measurement system (ideals, standards, criteria), as elements of activity structure (goal, means, result), as scientific categories (abstract-concrete), as characteristics of developmental direction (positive, negative, anti-values). Probably, the range of these characteristics can be extended. In any case, psychologists talk about conscious and subconscious values.

The numerous characteristics of values allowed F. Znanetskiy to formulate the definition of values through the concept of "any fact": "Social values or values are any fact that possesses content and significance for a particular social group, which can become an object of activity" [303]. Furthermore, "Values are all phenomena that do not belong to the natural, physical world. However, any natural thing can suddenly become a value if it is endowed with meaning. Therefore, understanding what is a value can only be through the study of social action. It is precisely in action that an object can manifest itself as a value, and a value as a mere object, depending on the goals and aspirations" [304]. Thus, the value properties of any phenomena and objects emerge when a social context arises in the process of interaction and their evaluation – defining the significance, importance, and value (price) of these phenomena and objects, which become relevant for society (Fig. 1.3.1). The moment of formation or recognition of value represents a fact of the executed choice among alternatives. Or as noted by L.V.

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[303] Thomas S., Znaniecki F. The Polish Peasant in Europe and America by William Vol. 1, part. 1. N-I. 1918.P. 21

[304] Chesnokova V. Florian Znaniecki. Values and attitudes. file:///C:/ /Users/Admin/Desktop/Olesya%20Forging%20new%20values/Publications%20to%201.1/Florian% 20Znanetsky.%20Values%20and%20establishments.%20- %20analytical%20portal%20POLIT.RU.pdf (Date of access: 12.07.2022)

Baeva, the fact of existential choice: "By 'existential,' we mean associated with existence but acquired independently in processes of permanent qualitative choices [305].

Politics

IT facts that

determined the choice, influenced

"Any Facts."

IT

Culture

Social

life

Economy

Choice

Installations

1   2   .....   №

Possible alternatives (social values - other people, groups, society)
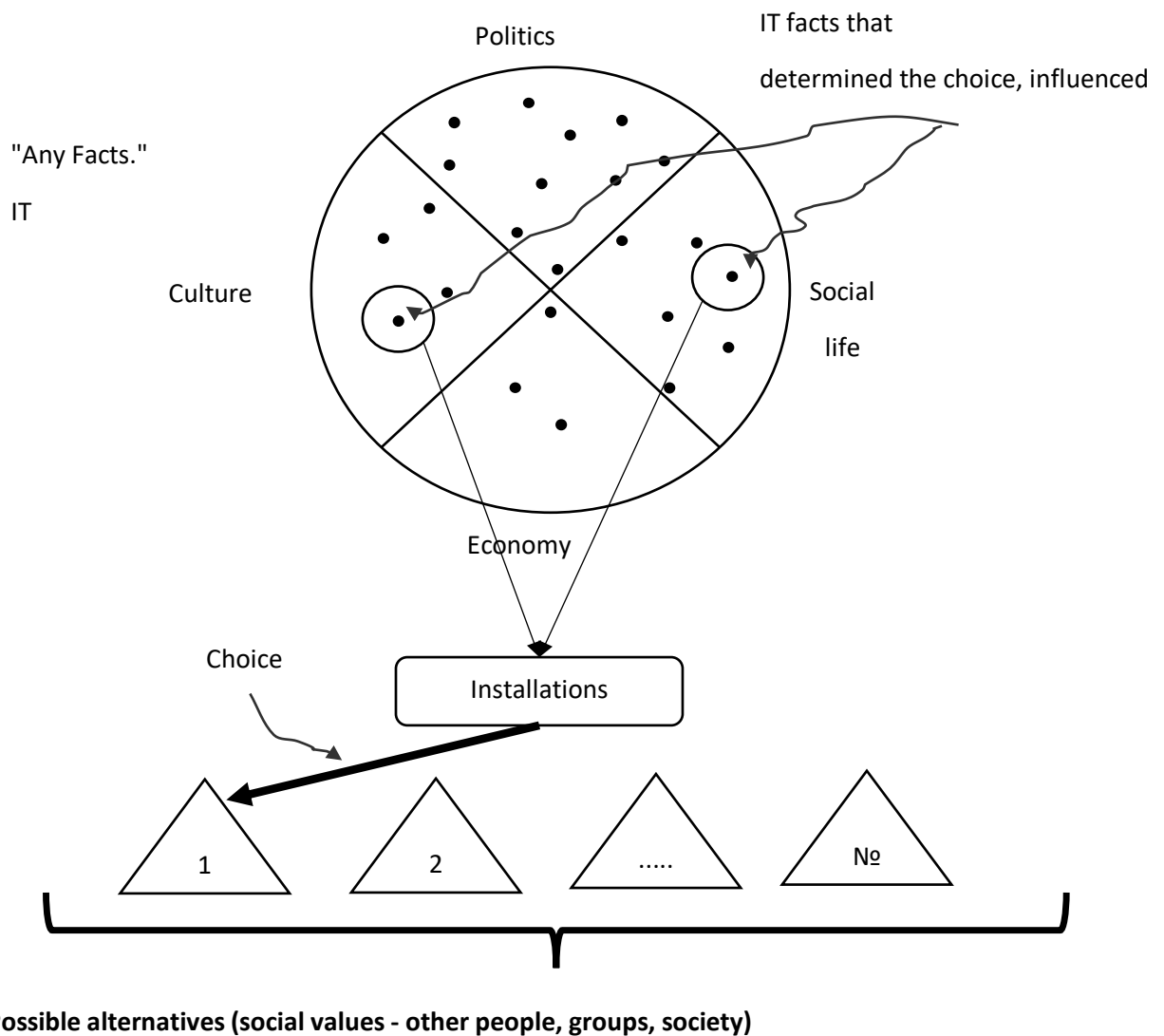
Fig. 1.3.1 Any facts that hold significance for an individual can become values.

It is essential to note that based on the demonstrated logic of explaining values as 'any facts,' as well as on the provisions of Federal Law 'On Information, Information Technologies, and Information Protection' No. 149-ФЗ [306], in the broadest sense, within the study, **values of IT specialists** should be *defined as information, more precisely - all material and spiritual phenomena that are significant, important, and valuable for their activities, for the production, collection, processing, storage,*

[305] Baeva L. V. Values as an existential choice // Values and Meanings. 2011. №6 (15). C.

[306] Federal Law "On Information, Information Technologies and Information Protection". 27 July 2006 No. 149-FZ

*transmission, and utilization of information, **in the interest of obtaining information of new quality that reveals characteristics** of objects, processes, phenomena, informational products, as well as the dissemination of obtained information and the methods of carrying out such processes.*

Key Principles of Researching IT Specialists' Values. The study of IT specialists' values encompasses a set of essential principles that can be effectively applied using theoretical approaches developed by the classics of sociological science. Here are some of the main principles for researching values.

Relevant examination of values along the axis: personal values - group values - societal values. In this regard, it is crucial to orient the study towards identifying the unity-opposition of established socio-professional norms on the one hand, and the values of new socio-professional groups on the other. Despite the emerging moral force and cohesion of the new professional group [307], , the influence of society on the values of professional groups and conflict resolution should be acknowledged as having decisive significance [308]. As noted by G.A. Yastrebov, the key features of the immediate social environment significantly depend on the economic and socio-political specifics of a particular society. However, it is worth considering that the social environment, examined from various aspects, never undergoes uniform development and can either precede social changes or lag behind their pace. This diversity in the level of development of the social environment is a crucial prerequisite for the social differentiation of individuals [309]. The formation of unified professional values plays an important role in culture, which 'contains a wide range of value standards that justify the choice of various 'scenarios' or their rejection, as well as forms of 'representations.' The cultural system is similar to a bank of information that individuals and groups use (internalize) to carry out actions' [310] (Fig. 1.3.2)

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[307] Durkheim E. Value and "real" judgements // Sociological Studies. 1991. № 2.

[308] Durkheim, Emile. Sociology and Philosophy. New York: The Free Press, 1974. p. 68

[309] Yastrebov G.A. Reproduction of socio-professional groups in modern Russia // The World of Russia. Sociology. Ethnology. 2009. №2. C. 119.

[310] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. C.18.

Ценности социально-профессиональной группы ИТ-специалистов

Ценности личности ИТ-специалиста
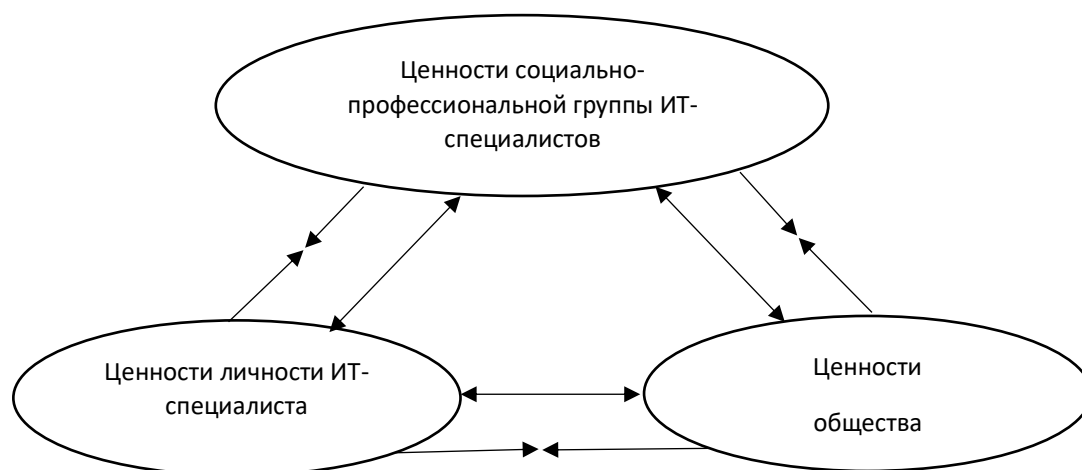
Ценности общества

Fig. 1.3.2 Personal values – professional group values – societal values as unity and opposition.

In the aggregate of norms and values of both personality and society within the group, a particular collective form of beliefs, interaction principles, and communication emerges [311]. This reflects, on one hand, the values of the individual, on the other hand, the specificity of professional values, and on the third hand, the peculiarities of society. This emerging collective form of values no longer belongs to the realm of objects or to the realm of subjects creating these values (H. Rickert). Forming group values should be determined as independent, and their reality emerges in the plane of assessing importance, value, and significance - in the plane of evaluation (assessment as the determination of future value or lack thereof) in the process of joint professional activities [312]. In this respect, it is relevant to use M. Rokeach's ideas about the subjective beginnings of studying values[313], the division of values into terminal and instrumental ones, and subsequently comparing them with terminal and instrumental values of the group. The altered values of participants in joint activities influence the distancing of socio-professional groups, overall societal stratification. Therefore,

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[311] Giddens, Anthony. "The 'Individual' in the Writings of Émile Durkheim." European Journal of Sociology / Archives Européennes de Sociologie / Europäisches Archiv Für Soziologie, vol. 12, no. 2, Cambridge University Press, 1971, pp. 210–280

[312] Rickert 1997 - Rickert G. Boundaries of natural-scientific education of concepts. SPb., 1997.

[313] Rokich, M. The Nature of Human Values / M. Rokich // Svobodnaya Pressa. – 1973. – No. 5. – P. 20-28

'When studying the regularities of social reproduction, especially the reproduction of social stratification in society, one must take into account the distances between the social groups that form the corresponding structure. Distances are derivative (indirect) characteristics of social relations, and they allow tracing how changes occurring in society bring some social groups closer and distance others.' [314]. Such social distances between representatives of various socio-demographic groups may arise from several aspects. Primarily, they may be based on the level of material well-being, such as income, housing quality, etc. Secondly, these distances may result from differences in culture and preferences, including non-work-related activities. Thirdly, they may stem from inequalities in access to power and resources related to the distribution of economic and social goods, including levels of responsibility and authoritative powers. However, in practice, closer to the concept of social relations is an indicator that measures the intensity and frequency of interactions between representatives of the examined social groups. The intersection of these groups is most likely in areas where their representatives engage in similar activities and have similar living conditions [315]. This indicator emphasizes that the frequency of interactions between representatives of different social groups at the level of social ties directly correlates with the proximity of their social communities in social space. It also suggests that more frequent social interactions between these groups may indicate similarity in other social parameters. Changes in social ties reflect changes in the social structure of society. If social groups become more isolated from each other, it may indicate the fragmentation of society into separate segments. Conversely, more open, and frequent interactions between different groups may indicate a more integrated and united social structure. Thus, the number of marriages and friendships between representatives of different social strata

[314] Yastrebov G.A. Reproduction of socio-professional groups in modern Russia // The World of Russia. Sociology. Ethnology. 2009. №2. P.128.

[315] Deryugin P. P. et al. Social well-being of the population of a megacity as an integral indicator //Discourse. 2020. T. 6. No. 2. P. 61-79.

can serve as an indicator of social distances and reflect the nature of social relations in society [316].

An essential aspect in analyzing the group values of IT specialists is examining the harmony between group and personal goals. Group actions are defined by objectives that, alongside values, guide interests in understanding social reality. Therefore, goals, values, and their correlation primarily constitute the meaning of professional activities, human behavior, and actions, reflecting the unity of acquired knowledge and evaluation [317]. At the individual level, two primary life goal orientations are identified: the first is directed towards the external world of the individual, while the second is focused on the internal world. Throughout life, individuals need to choose between these vital objectives. Life choices are set, and the adopted value takes on an ideal form, subjectively existing while regulating goal achievement [318].

As previously demonstrated in the sociological analysis of IT specialists' values, a significant interest lies in identifying the relationship between norms and values. During interactions, norms are developed, including expectations regarding participants' behavior, aligning with common cultural values. The system of norms, oriented towards institutionalized 'patterns,' ensures coordinated actions and the stability of the social system. This process shapes and maintains the social structure, encompassing diversified institutions and subsystems. Parsons distinguishes two types of support for social equilibrium using cultural 'patterns [319].

Norms dictate how individuals should behave to maintain the equilibrium of social exchanges [320], with deviations suppressed by competition. Hence, sociological research, sociology itself, 'is oriented towards integrating social actions by defining

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[316] Yastrebov G.A. Reproduction of socio-professional groups in modern Russia // The World of Russia. Sociology. Ethnology. 2009. №2. P. 129

[317] Rickert 1998 - Rickert G. Sciences of Nature and Sciences of Culture. M., 1998.

[318] Bruun 2001 - Bruun H.H.. Weber on Rickert: From Value Relation to Ideal Type // Max Weber Studies Vol. 1 No. 2 (May 2001). P. 138-160.

[319] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. P. 19.

[320] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. P. 10.

normative patterns (common goals) and the institutionalized means of achieving them in different situations,' as noted by G.S. Batygin " [321].

Max Weber emphasized that the relationship between existing norms and values can be highly diverse, leading to an infinite number of new values. Values, to a considerable extent, depend on a subject's willingness to embody them in life, whether to accept or reject these values [322]. It's important to note that an individual's preferences are significantly shaped by subjective states, which aren't always explainable by objective reasons. Sometimes, the individual themselves can't clearly articulate the motives behind their actions. Utilitarian social theory offers a solution to this issue by establishing common goals in the social system and means of achieving them, considered common for all normal individuals. Thus, this model assumes that people have common goals and ways of achieving them, directing their behavior in society, even if they can't always clearly explain the motives behind their actions [323].

The world of values is infinite and reflects the diversity of interactions between individuals, groups, and society. There are no right or wrong values; instead, there are values that are more stable and those that are more dynamic. The focus should not be on the presence or absence of values per se, but on whether these values are recognized or not [324]. In the technological realm of sociological analysis of fundamental values as a set (system) of desires and goals, Charles Schwartz's work is utilized. The author of the original methodology for studying values synthesized extensive material on their nature and characteristics and put forward the idea of the existence of special values - 'universal motivational types,' the so-called 'domains,' which include self-regulation, sensory pleasure, hedonism, achievement, power, security, conformity, tradition

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[321] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. P. 11.

[322] Weber 1990 - Weber M. Selected Works. M., 1990.

[323] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. P. 10.

[324] Bruun 2007 - Bruun H.H.. 0Science, Values and Politics in Max Weber's Methodology. Bodmin, 2007.

maintenance, group welfare, and general welfare of all people [325]. Value groups correspond to motivational parameters and can differ from one another. Since goals are conditioned by human motivation, the study of values can be viewed from the perspective of analyzing only the basic human needs [326]. Schwartz's methodology, actively employed as a fundamental tool in various sociological studies of values among different social groups [327].

The ideas of G. Hofstede, who formulated the primary postulates of value theory within organizational structures, hold particular interest in exploring the values of IT specialists. Organizations should be seen as a unique form of professional groups where values are developed and shaped in a specific manner. According to Talcott Parsons' sociological concept, it's important to note that not all aggregates of people or groups within countries can be classified as societies. According to his theory, a society constitutes an organized whole comprising functional systems necessary to maintain internal equilibrium. Hence, a society represents a specific type of social system possessing a higher degree of self-sufficiency within its environment [328]. The distinction in the formation of values in groups and organizations primarily lies in the presence of common goals within organizations. When analyzing organizational culture, researchers like G. Hofstede identify specific parameters reflecting values associated with labor activity [329]. The researcher considered that values always imply a choice between various alternatives and opposing characteristics, such as good and evil, openness and closedness, and so forth. Hofstede highlighted important aspects in

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[325] Helkama K. Recherches recentes sur les valeurs // J.–LBeauvois, N.Dubois, W.Doise. La construction sociale de la personne. Grenoble, 1999, p. 61–75.

[326] Schwartz S.H., Bilsky W. Toward a theory of the universal content and structure of values: extensions and cross-cultural replications // Journal of Personality and Social Psychology, 1990, vol. 58, p. 878–891.

[327] Voskresenskaya O. A., Sladkova N. M., Gorkovenko Y. L. Assessment of value-motivational attitudes of an employee in the field of information security // Socio-labour research. 2022. №1 (46).

[328] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5 P. 18.

[329] Hofstede G. Culture's Consequences: comparing values, behaviors, institutions, and organizations across nations (2nd ed.). — Thousand Oaks, CA: SAGE Publications. 2001. — 596 p.

the nature of values. He argued that values are formed in early childhood as stable rational postulates. These values are organized hierarchically and may not correspond to each other. Therefore, dynamics in the realm of values, including the demise of some and the emergence of others, are an integral part of the process. Values can conflict in response to changing factors and conditions in the external environment. They can also have both positive and negative directions in various spheres of life [330].

Sociologist F. Trompenaars developed an empirical method for studying values based on one of the old approaches: his measurements of values were based on five of Parsons' 'typical variables.' He studied the preferences and values of 46,000 managers in 40 countries and found that people from different cultures differ in specific, often predictable ways. This is because individuals raised in one culture are taught similar values and social norms from an early age, and these values, as cultural traces, become rooted in a person's psyche [331].

In Western studies, professional values are seen as part of a broader process of social interaction. M. Tomasello views professional values as a product of motivational and cultural-cognitive processes [332]. Groups of people can create unique social mechanisms for the growth and preservation of professional motivation [333]. For instance, leadership and collaboration values aid in solving problems of social coordination [334]. According to Hogan and Roberts, developed communication skills aid in social adaptation, making an individual's communication qualities important in the structure of professional values [335]. Individual professional motivations are linked

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[330] Tikhonova N. E. Dynamics of normative-value systems of Russians and the prospects of the modernisation project // Bulletin of the Institute of Sociology. 2011. №3.

[331] Trompenaars F., Hampden-Turner Ch. Riding the Waves of Culture: Understanding Cultural Diversity in Global Business. (2nd edition). — McGraw-Hill Professional, 1998.

[332] Tomasello, M. (2008). The origins of human communication. Cambridge: MIT Press

[333] Warneken, F., Tomasello, M. (2007). Helping and cooperation at 14 months of age. Infancy, 11, 271–294.

[334] Van Vugt, M., Hogan, R., & Kaiser, R. B. (2008). Leadership, followership and evolution: Some lessons from the past. American Psychologist, 63, 182–196.

[335] Hogan, R., Roberts, B. W. (2000). A socioanalytic perspective on person–environment interaction. In W. B. Walsh, K. H. Craik, R. H. Price (Eds.), New directions in person–environment psychology (pp. 1–24). Hillsdale, NJ: Lawrence Erlbaum

to the pursuit of high ranks and dominance over others; agonistic motivations regulate access to roles, privileges, and resources and are associated with values of power and leadership [336].

The sociological analysis of IT specialists' values implies their examination at macro, meso, and micro levels. This notion was previously substantiated by T. Parsons as a theoretical model. T. Parsons justified the possibility of merging the macro and micro levels of studying values. He revealed connections between personal attitudes as ideal notions of valuable, important, significant things and their multifaceted relationships with socio-objective ideals. Thus, Parsons took an important step by defining the binding role of values between subjective assessment (individual) and normative-cultural models of society or groups (socium) [337]. In other words, T. Parsons justified the mechanisms and strategies of interchanges between norms and values at individual and social levels. As such, values and value orientations act as social regulators of the direction and character of development for both the individual and the entire society [338]. This perspective on the interrelation of values in the system of individual – group – society can be considered one of the most relevant for the perspective of modern research, not only in sociology but also in other sciences [339].

Modern researchers share T. Parsons' position. 'It is quite evident that in the digital reality, values and norms different from those in the actual reality have emerged. We share T. Parsons' view, describing these categories as regulators of the process of 'subjects accepting specific commitments,' as well as 'orientation methods for action in functional and situational conditions.' Traditional values and norms have been forming for centuries. Currently, humanity faces an incredibly significant challenge of integrating traditions and innovations reasonably to minimize the ever-increasing informational load on individuals. Complete abandonment of traditions, which serve

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[336] Gilbert, P. (2003). Evolution, social roles and the differences in shame and guilt. Social Research, 70, 1205–1230

[337] Parsons T. The structure of social action. Moscow, 2000. 880 p.

[338] Yarina E.V. Theoretical analysis of the concepts of "values" and "value orientations" // Academic notes of OSU. Series: Humanities and Social Sciences. 2014. №5. P. 161.

[339] James W. The Diversity of Religious Experience. M., 1993. p. 133

as the foundation providing a sense of stability and aiding in the realization of numerous social acts, is impermissible. Therefore, individuals are constantly faced with the axiological challenge of digital reality [340].

The consistently demonstrated research strategy has been implemented by G.A. Yastrebov. Alongside analyzing the process of forming IT specialists' values as representatives of specific organizations, the author studies this process against the backdrop of society in the broadest sense. This research is based on the principle of 'reducing the holistic process of social reproduction (reproduction of social structure) to a set of individual status reproductions ' [341]. The author identifies numerous factors influencing the process of social reproduction and classifies them into three groups. The first group includes macro-environmental factors encompassing changes in social relationships at the societal level, as well as the development of the institutional structure, such as markets, professions, education and healthcare systems, among others. These factors, at the level of specific social communities, transform into meso-environmental factors representing the immediate environment in which individuals reproduce their status and reputation.

Finally, at the micro-environmental level, factors that reflect the features of the immediate environment of reproduction of individuals as members of society and maintenance of their social status begin to appear. This level includes the nature of an individual's social environment and his/her social ties, such as family, close relatives, friends, and colleagues. All the mentioned factors related to social and professional reproduction can be characterized as institutional[342] . G.A. Yastrebov reveals that the analysis of the social environment opens the possibility of studying the reproduction processes of both social and socio-professional groups, as well as social institutions of society, including the interaction of each individual with this environment. This

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[340] Purynycheva G. M., Badanova N. M. Digital reality as a challenge to humanity // Philosophy and Society. 2021. №4 (101). P. 69-70.

[341] Yastrebov G. A. Reproduction of socio-professional groups in modern Russia // The World of Russia. Sociology. Ethnology. 2009. №2. P. 117.

[342] Yastrebov G. A. Reproduction of socio-professional groups in modern Russia // The World of Russia. Sociology. Ethnology. 2009. №2. P. 117.

environment provides the individual with resources that shape his or her social position and role in social networks. Particular attention is paid to the resources created by two key institutions - family and education[343] .

Summarizing the results of the analysis, the author's definition of values can be expressed as follows**. Values are** *any facts of* material or spiritual nature (goals, means, results) that have important and actual - valuable social significance - that play a decisive role in the choice of alternatives and determine the behavior and activities of an individual and society. At the level of the individual, values are a *systemic formation* that is expressed in *attitudes, beliefs and orientations*. At the level of society and its social institutions, values manifest themselves in the form of *norms, principles and rules that* orient the direction and nature of social development. The strategic directions in the formation of values are knowledge in combination with practical experience.

Professional values. Special characteristics of IT professionals' professional values: conceptual-theoretical framework

Modern market society is characterized by high sociodynamics. The directions of sociodynamics, in particular, affect the labor market, where under the influence of numerous factors, first of all, scientific and technological progress, modern nano-, bio-, intellectual and other technologies, as well as new technical opportunities, many new professions emerge[344] . As a consequence, the formation of numerous new professional values[345] . The emergence of new professions and transformation of traditional professions calls for intensified research, which studies many diverse facets of the problem of emergence and social attitude to new values, including in the diversity of

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[343] Yastrebov G. A. Reproduction of socio-professional groups in modern Russia // The World of Russia. Sociology. Ethnology. 2009. №2. P. 118.

[344] Belikova N. V., Shiryaeva T. Yu. Changes in the labour market in the context of the emergence of new professions // Vestnik RUK. 2021. №1 (43). P. 16-17.

[345] Professional socialization of IT specialists in the labour market (in Russia, USA, Europe and China) / Bannova O.S., Deryugin P.P. // All-Russian Scientific Conference: "Information - Communication - Society", 18 - 19 March 2021, St. Petersburg. SPb.: Izd-vo SPbGETU "LETI", 2021. P. 144 - 146.

professions "man - technology", "man - man", "man - living nature", "man - sign system", "man - artistic creativity" (E.A. Klimov).

Representations of modern authors regarding professional values and approaches to their classification are shown in Appendix 5.

As can be seen from the analysis of the presented points of view on the essence and structure of professional values, with all their diversity, the main elements of such a structure are: a) intrapersonal terminal and instrumental values that motivate self-realization of a person in professional activity; b) external professional values of the microenvironment; c) external professional values of the macroenvironment. (Fig. 1.3.4)
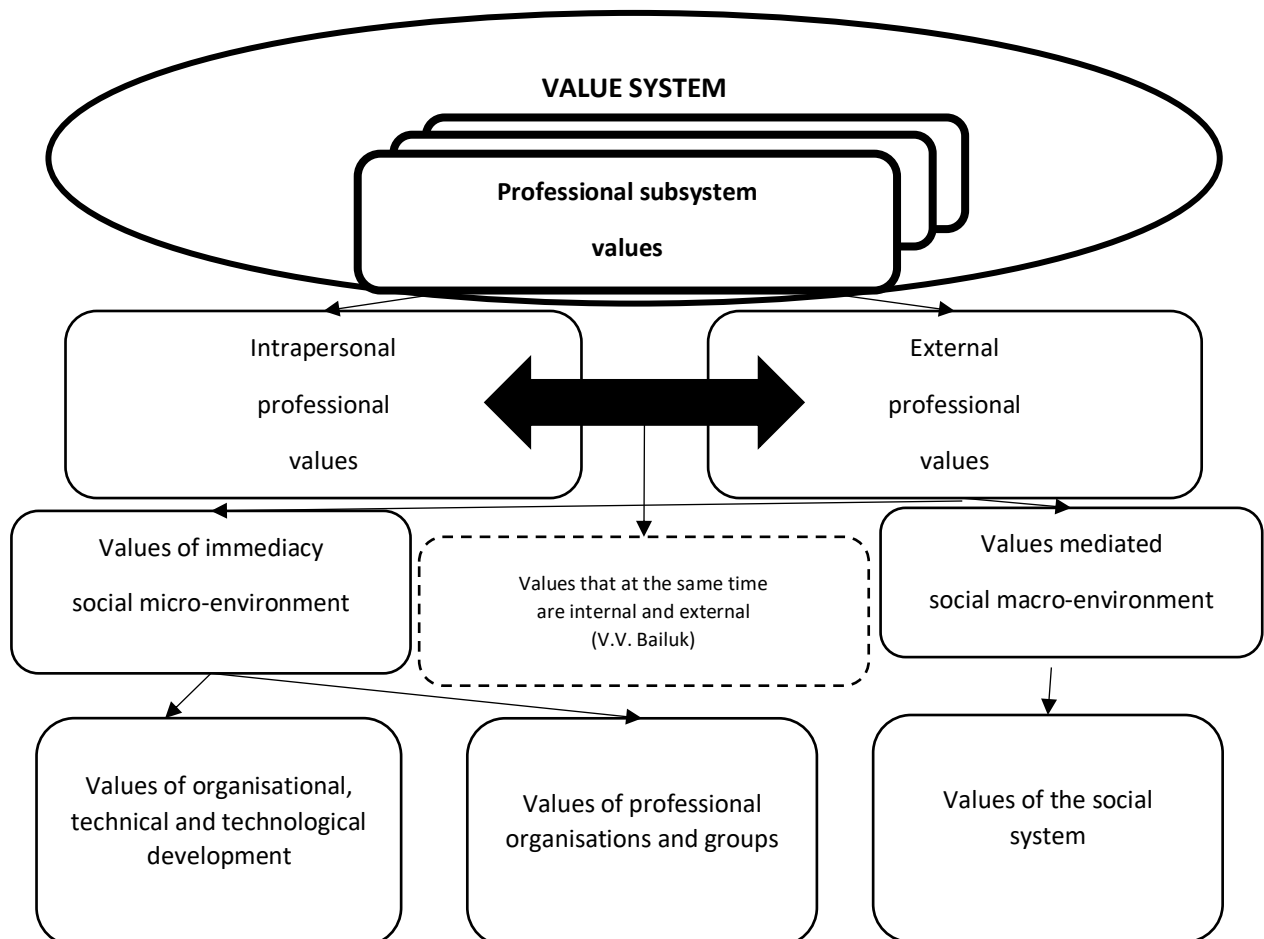

Fig. 1.3.4 Subsystem of professional values (Compiled by the author)

The data presented in the figure show the validity of the conclusion that the concept of professional values and professional value orientations is interpreted very

widely, that is, it continues to be developed and supplemented[346] . Along with this, the analysis of the obtained results allows us to draw several **important conclusions about the ideas of modern authors about the essence and characteristics of professional values. Let us outline these characteristics**:

- *presence of professional values dichotomy on the axis of person - external environment.* According to the research data, the sociological approach includes the analysis of professional values of an individual specialist and their comparison with the values of society, considering them as relatively independent phenomena[347] . In particular, it is possible to record situations of complete identity of professional values of the society and an individual specialist - these are more likely to be short historical periods. On the contrary, the differences - lagging and advance - in the formation of professional values of society and specific people-professionals will be more often observed in the periods of socio-economic transformations, during the transition of society from one state to another.

- *the importance of intrapersonal professional values in the overall structure of professional values.* As it was emphasized earlier, values related to wealth, power and prestige, including signs of public recognition of the importance of professional activity goals, act as the basis of normative order, uniting people into a community and not always based on "social instinct"[348] . Along with these objective indicators, the role and importance of satisfaction in the realization of professional values in the socio-professional group of IT specialists is quite significant. In particular, this is evidenced by the results of a number of domestic and foreign studies. For example, in Western sociological science such indicators as satisfaction with labor professional activity are

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[346] Kokh I.A., Alekseeva L.A. Professional-value orientations of student youth on the example of the study of priorities in the structure of terminal and instrumental life values of students // Management Issues. 2018. №4 (34). P. 117.

[347] Pelevin S. I. Value orientations of technological and technical development of society // Values and meanings. 2021. №1.

[348] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. P. 12.

recognized as one of the central moments of professional values.[349] Satisfaction, according to this logic, stems from the experience of the labor process, the possibility of full disclosure of one's abilities and independence in work. Then, intrinsic values such as respect, status and approval related to labor results follow this experience[350] The values of salary, security, opportunity for promotion, communication with colleagues, etc. play an important role. The importance of communicative values of IT specialists' personality is explained by the fact that the values of this group are closely related to the peculiarities of a person's personal development.[351] The formation of a person's communicative values, which act as a basis for personal and professional creation in IT groups, largely depends on how skillfully, quickly and easily a person enters into contact with other people and feels successful.

The development of professional and personal values of a person occurs only in the aggregate, and not under the influence of only one group of value priorities.[352] This character of internal unity of personal value priorities is explained by the fact that, developing in personal terms, a person sets for himself certain goals, which in his opinion are achievable, and which contribute to the activation of all the reserves responsible for his professionalism and personal orientation.[353]

According to E. F. Zeer, it is impossible to analyze the personality of a specialist of a particular profession, his or her attitude to the world without studying the system of their value orientations as central personal formations. Value orientations express a person's conscious attitude to social reality and specify the motivation of behavior, which significantly affects all aspects of professional activity. The structure of a

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[349] Büssing A. Motivation and Satisfaction // Human Resource Management / Edited by M. Poole, M. Warner. - SPb.: Peter, 2002. P.785-789

[350] Allison, Derek J. Hodgkinson's Paradoxical Paradigm // Values and Ethics in Educational Administration., 2002 No. 1

[351] Feldman, Ronald A. "'Professional values: a cross-cultural and cross-professional comparison.'" International Review of Modern Sociology, vol. 3, no. 2, 1973, pp. 119-26.

[352] RANKEL, CHARLES. "Social Values and Professional Values." Journal of Education for Social Work, vol. 5, no. 1, 1969, pp. 29-35

[353] Kadakal, R. Truth, Fact and Value: Recovering Normative Foundations for Sociology. Soc 50, 592-597 (2013).

person's value orientations, the combination and degree of preference for other values allow determining the goals that a person's professional activity is aimed at achieving.[354]

Professional values can be seen as socially approved cognitive representations of basic motivations and an integrative concept that describes and explains these basic aspects of motivations.[355] A crucial aspect that distinguishes values is the type of motivational goal they express.[356] For example, a value such as "safety" comes from the motivation for the security of organisms and groups to protect themselves from threats to their integrity, whereas the value "conformity" comes from the assumptions of friendly interaction and group survival, by which people restrain impulses and suppress actions that might harm others.[357]

- interaction of professional values of the individual and professional values of the social order as a condition for the emergence and development of professional values. Bailuk V. V. provides evidence that allows us to identify a certain group of professional values that have both internal and external character[358] . According to the author's view, professional values include a variety of aspects that can be divided into internal and external. Internal values include motives, needs, skills, knowledge and social personal values related to the professional activity of the specialist itself. Labor results, the incentive system within the organization and the employee's activities both inside and outside the company are considered to be both internal and external values. External values in this context can be favorable conditions, such as natural, family and hobbies, as well as conditions provided within organizations, such as health camps or

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[354] Zeer, E.F., Pavlova, A.M., 2008. Psychology of vocational education: practical work. Publishing Centre "Academy", Moscow, p. 144.

[355] Fries, S., Schmid, S., Dietz, F., & Hofer, M. (2005). Conflicting values and their impact on learning. European Journal of Psychology of Education, 3, 259-273

[356] Sagiv, L. (2002). Vocational interests and basic values. Journal of Career Assessment, 10, 233-257

[357] Schwartz, S. H., & Bilsky, W. (1990). Toward a theory of the universal content and structure of values: extensions and cross-cultural replications. Journal of Personality and Social Psycho logy, 58, 878-891.

[358] Bailuk V. V. Values of professional self-realisation of personality // Pedagogical Education in Russia. 2015. №3.

vouchers. In general, professional values are considered as factors contributing to the productive self-realization of a specialist in the sphere of his/her professional activity;

- recognition of the importance of the external micro-environment for the process of formation and realization of potentials of professional values. The connection of professional values with micro-social environment, for example, can be traced in the situation when, at the level of professional subgroup demonstrating a high level of success, a person who previously did not demonstrate a high level of commitment to professional realization suddenly comes to the conclusion that his professional activity will largely contribute to his social status and growth, which contributes to the articulation of values of professional growth and self-development at the level of micro-social environment;

- classification (division) of values in the external micro-environment into two subgroups. In essence, this case confirms the idea that a modern professional simultaneously acts as a specialist possessing special digital, technical, technological and organizational knowledge, skills and abilities, but also modern professionalism is impossible without the ability to work in a team, group, organization. This is how two levels of professional norms are formed: "Professional norms are to some extent dual: universal definitions ("for all") are declared with necessity, but there are also internal particularistic norms ("for one's own")"[359] .

This relationship is explained by the fact that it is difficult for a person to exist separately, being alone with his/her thoughts, feelings, aspirations and experiences. The values of professional growth, which are directly related to the expression of some individual-psychological and individual-typological features of a person, act as a basis for the formation of the individual's desire to work as a team. It should be noted that the aspiration for collective professional growth and self-development in this connection becomes a so-called internal reference point for a person, within the framework of which it becomes possible to achieve vital tasks directly related to the

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[359] Batygin G. C. Structural functionalism of Tolcott Parsons // Vestnik RUDN. Series: Sociology. 2003. №4-5. P.12.

realization of professional growth values. For example, the presence of such an individual-psychological value of professional plan as curiosity allows one to independently and painlessly immerse oneself in the phenomenon under study, analyze certain regularities of its existence, and so on. However, the ability to work in a team contributes to the manifestation of this value in the form of an opportunity to share their professional experience, their own achievements in the field under study. This situation contributes to the formation of not only individual value professional experience of a person, but also group (collective) experience;

- *mediated influence of professional values of the external macro-environment on the professional values of the individual.* The studies show in the most generalized form that at the doctrinal level of analysis society and its social institutions determine the nature of development of professional values of numerous specialists. It is emphasized that the professional values of the external macro-environment have an indirect influence, and the links between these values and the professional values of a particular specialist are transformed by numerous factors and conditions at a number of levels.

The concept of professional values. Operationalization.

According to the results of the analysis, it becomes obvious that the concept of professional values should be considered at least at the level of the individual and society. Professional values at the level of the individual represent one of the components of the general system of personal values. This subsystem includes beliefs, attitudes and orientations that form the basis for the choice of goals, means and results in professional activity. Professional values are aimed both at self-realization within a particular profession and professional activity within social organizations and in the broader context of society. Most often, they are related to livelihood and income generation, which makes them an essential element of a person's professional life.

Professional values at the level of society are manifested through a variety of norms, principles and rules that define ideals, orientations and standards of professional activity of specialists. These values are important for the development of society in

certain socio-economic conditions. It is important to understand that professional values are not limited only to principles, as it may be incorrectly perceived in the public consciousness.[360] , The reality is much more complex, and numerous factors, including a variety of aspects, can influence the formation of professional choice. Thus, professional values cannot be reduced solely to the principles of homogeneity This principle contributes to the formation of a hierarchy of value priorities of an individual, which is directly related to his/her professional activity[361] Thus, the value of professional self-realization in an outstanding software developer may be no less important than the satisfaction of basic physiological needs, since for such a specialist there is no other way but to use his/her knowledge and n

Thus, further clarification and discussion of the content of the concepts of "professional values" and "professional value orientations" is required, as these terms may be used interchangeably in some studies and may have different meanings in others. To understand these concepts more precisely, more research is needed to clarify their content in the context of specific research objectives[362] . Indeed, in current research it is important to distinguish between the concepts of "professional values" and "professional value orientations." Professional values typically represent stable and long-term beliefs related to professional activities as well as one's own professional goals and moral orientations. They may include, for example, a desire to advance the profession, to serve the public, or values related to integrity and ethics in work. Occupational value orientations, on the other hand, refer to more specific actions, choices, and preferences related to occupational activities. They include, for example,

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[360] "professional values are principles that guide decisions concerning the labor and educational development of a citizen" Professional values: what are they? https://ru1.warbletoncouncil.org/valores-profesionales-184 (Date of reference: 22.01.2022)

[361] Tsvyk V.A., Tsvyk I.V. Moral values of professional activity in information society // RUDN Journal of Sociology. - 2019. - Vol. 19. - N. 3. - P. 530-542.

[362] According to A.A. Derkach, values exist in the form of value orientations, the system of which determines the content of a person's orientation and forms the basis of his/her attitudes, the core of motivation, life concept and meaning of life. Professional development is a meeting of profession and personality" [11, p. 3]. [11, c. 3]. 11. Derkach A. A. Akmeological bases of professional development. Voronezh: MODEK, 2004. 752 c.

a propensity to perform certain types of tasks, work methods, priorities in solving professional problems, and other aspects that may vary depending on the particular occupation and personal preferences. Understanding the difference between these concepts allows researchers to more accurately analyze and assess individuals' occupational values and orientations, which is important for a deeper understanding of the formation of occupational characteristics and motivation. [363] The study of an individual's occupational values and orientations within an occupational setting is key to understanding success and motivation in the field. Professional value orientations can serve as a kind of nautical chart, guiding an individual's actions and choices in the professional domain. Research on professional values and orientations is often conducted in the context of specific professions, such as pedagogy, exploring how professionals' values and orientations influence their professional practice and success. Understanding professional values and orientations is important for learning and development in the profession, as they can determine the extent to which an individual will experience satisfaction in their professional practice and invest effort in their development. Also, this understanding can help employers and organizations to select and motivate their employees more effectively by considering their occupational values and orientations. Therefore, the study of occupational values and orientations is an important area of research and can lead to improved occupational performance and job satisfaction.[364]

Concluding the analysis of professional values of IT specialists as an object of sociological research, it is important to note some relevant points.

Firstly, the study of the nature of professional values reveals the orientation of the strategy of their further analysis. In general, we can say that such a strategy is based on the orientation from a person's professional values, professional interests,

[363] Frankel, Charles, "Social Values and Professional Values", Journal of Education for Social Work, vol. 5

[364] Andryunina A.S. Formation of professional values in future teachers of preschool education: Avtoref. dis.kand. ped. nauk. Ekaterinburg, 2013. 22 p.

motivational sphere to social groups, organizations and society. [365] At the same time, the feedback from professional values of society to the individual is also important. This is explained by the fact that professional values are inherent in a person from early childhood under the influence of parental control. On this basis, a child from childhood internalizes the need to develop and achieve a certain level of life, however, in adulthood the achievement of professional life results is the basis of his/her life and activity.

Secondly, the development of professional value priorities is inherent in every personality, but not every person reaches a high level of formation of professional values. Much in this aspect depends on the social environment of a person, on the social environment in which he/she lives at present.

Thirdly, the development of value priorities of professional orientation depends a lot on the personality itself, because only a person realizes how much this or that professional value is required for comprehensive professional and personal growth and self-creation.

Fourthly, professional values fulfil a number of functions in relation to both the individual and the social system. In relation to the individual, such values play the role of regulators, forming the directions of professional formation and activation of the human need-motivational sphere. In the social sense, professional values should realize the orientation adaptation function, which contributes to young people's choices in the labor and social markets, as well as the status-forming function associated with the processes of social mobility[366] .

Fifthly, professional values of a personality are formed under the influence of two groups of factors, which are primarily related to the acquisition of professional knowledge, and through the acquisition of professional experience - the practical part.

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[365] Kokh I.A., Alekseeva L.A. Professional-value orientations of student youth on the example of the study of priorities in the structure of terminal and instrumental life values of students // Management Issues. 2018. №4 (34). P.114

[366] Kokh I.A., Alekseeva L.A. Professional-value orientations of student youth on the example of the study of priorities in the structure of terminal and instrumental life values of students // Management Issues. 2018. №4 (34). P. 115

Different social communities have different experiences and different values. This is expressed in the fact that different social communities welcome their professional value priorities of the individual. So, for example, an employer looking for an intelligent specialist for a vacancy of a developer will look closely at the prospective candidates for this position, because it is the professionalism of a person, a great professional experience, the ability to cope with difficult tasks that is of great importance to him. (Fig. 1.3.5.) All this indicates that the head of the organization is accustomed to work in a strong enough team, in connection with which, with the help of his influence, employees become professionals in their field, without realizing it themselves.
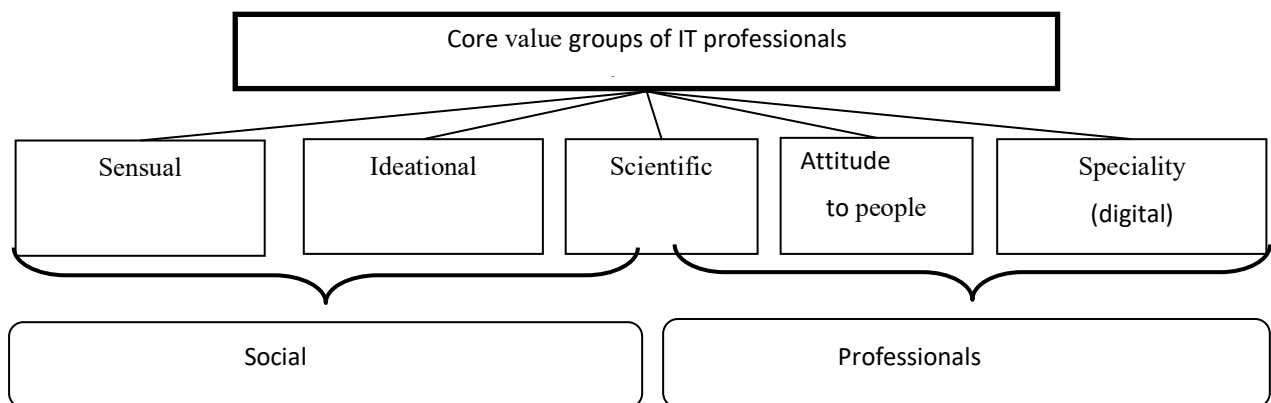
Fig. 1.3.5. Main groups of values of IT specialists as an object of sociological analysis

In the totality of the findings of this part of the study, it can be argued that an empirical study of IT professionals' values is most appropriately carried out on a multi-paradigm basis.

Conclusions to Chapter 1

1.   The conducted theoretical and methodological analysis allows us to talk about the social integration of a professional group of IT specialists as a process that has mutually directed vectors of development: the concept of "social integration" can be considered, on the one hand, as a process of active inclusion of an individual in the social life of society, and on the other hand, as a process of active assimilation of social

norms and values by an individual[367] . In our study, thus, the sociodynamics of integration of IT professionals is considered from two sides, as a process of internal integration - the formation of common values within the professional community of IT professionals and as a process of external integration - the unity and difference of values of IT professionals with different groups of Russians.

2.   The theoretical and methodological analysis of the values of Russian IT specialists as an object of sociological research shows that these values should be considered as the values of a new socio-professional group with a significant potential for social development and social integration of Russian society in XX I century. These values most significantly influence the hierarchy of social structure and its transformation in Russian society, reflect the specifics and various trends of Russian society related to digitalization and information.

As an object of study in sociology, the values of IT professionals are characterized by important heuristic features:

- In socio-historical terms, these are values that emerge end masse in Russian society in the middle of the 20th century on the basis of a new differentiation of spheres of labor and the emergence of a new type of community of professionals - specialists of the information social space. As a result of the emergence of the digital space in the social structure of Russian society, a new group of specialists is singled out, which is professionally engaged in the development of the digital component. This process is further accompanied by the differentiation of labor activities of specialists in the IT sphere and the emergence of a number of IT professions related to the provision and development of various aspects and directions of the digital society. Accordingly, specific values are formed and differentiated in this socio-professional group;

- In socio-economic terms, these are values that ensure significant changes in the nature of production and management, the expansion of the output of goods and

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[367] Tabylginova L. A. Main scientific approaches to the concept of "Social integration" // Scientific Notes of ZabGU. Series: Philosophy, sociology, culturology, social work. 2011. №4. P. 201.

services, a decisive increase in the volume and speed of activity of enterprises and firms, a significant increase in labor productivity and cost optimization;

- In socio-political terms, these are values that are important for the social and political integration of the Russian society in modern conditions and in the future. They have certain peculiarities due to their special social nature. IT specialists by the nature of their work are included in global network systems and therefore their values can become multidirectional. The activity of IT specialists is capable of rapidly scaling information, which inevitably arouses interest in their work on the part of social and political institutions of society;

- in socio-cultural terms are values that reflect the socio-professional differentiation of the group of IT specialists in interaction with other socio-cultural groups. On the other hand, the nature of the activities of socio-professional groups of IT specialists implies their active interaction with different in nature socio-cultural values of the Russian society and can significantly influence the integration of the Russian society as a single cultural space;

- socially, these are values that ensure not only the integration of Russian IT specialists themselves, but also significantly influence the integration of both the sovereign Russian society and its global integration into the world community as an independent social structure. The values of Russian IT specialists have a set of characteristics that contribute to this social independence and integration. In particular, on the basis of their professional activities: network communities emerge, connections and relations are formed both within the country and abroad; a variety of technical capabilities that provide various forms of communication are developed; a common language of communication between the most diverse participants of the communicative process is spread; similar technical devices and technologies are used.

Many researchers are involved in the research of IT specialists' values, thanks to which the research of IT specialists' values acquires interdisciplinary character. At the same time, the study of IT specialists' values within the framework of sociology becomes especially relevant, but such studies are carried out only fragmentarily. The

weak development of the theory and methodology of sociological research of IT specialists' professional values has a negative impact on interdisciplinary research. As a rule, it is expressed in a simplified understanding of their social role and one-sided analysis of the regularities of their social development.

3. The values of IT specialists as an object of research in sociology should be considered as the values of a socio-professional group, in contrast to the values of mass IT users, which can be considered as a social association of IT users - as social communities. The values of IT specialists have important features as the values of a special socio-professional group. This is proved by the following main provisions:

- These are the values of a socio-professional group that emerged as a result of the extended reproduction of elements of social structure, which allows us to speak about their specific features not previously studied in sociology;

- the nature of IT groups is constructed as an artificial community created by "special measures" and "specifically for" participation in the activities of certain structures. As "groups" they realize the joint activity of people rather than their natural coexistence;

- The conditions for their emergence and existence are the purposeful efforts of social institutions or individuals to create, target and control them;

- they play the role of instrumental-technological strengthening of means of effective socio-economic and other activities;

- socio-professional groups of IT specialists are agents of secondary socialization;

- They may include actors with a wide variety of social and psychological characteristics - heterogeneous;

- for them a high degree of cohesion, motivation, influence on the behavior of participants and a common organizational culture are important;

- socio-professional groups of IT specialists to a large extent profess common values.

The shown and other features of the community of IT specialists allow us to rightfully refer them to socio-professional groups, which implies the use of specific sociological strategies and research methods.

4.　　The study of socio-professional groups in sociology by addressing values as a factor in the formation of the social structure of society has solid scientific and theoretical foundations, consisting in the following: 1. Developed theory of social groups; 2. Justified theory of sociology of professions; 3. Comprehensive theory of sociology of values. The shown theoretical developments provide the sociological study of values of the socio-professional group of Russian IT specialists with the necessary and sufficient scientific potential.

P.A. Sorokin's integral concept of society has a special heuristic potential for studying the values of the socio-professional group of Russian IT specialists. Firstly, within the framework of his theory, values, including the values of IT specialists, can be considered in dynamics and in a broad social context, in relationship with the development of the entire social structure and society as a whole; Secondly, the theoretical framework of the integral concept allows us to study the values of IT specialists not unilineal, but as cyclical and appearing as a result of the addition of a number of social factors and recurring phenomena in socio-historical terms: Thirdly, to study the values of Russian IT specialists as such social and historical phenomena.

5.　　It is fair to characterize the professional values of IT specialists as basic formations on the basis of which a new type of society is being formed - the digital society. The values of IT specialists considered as a direct subject of sociological research have a number of advantages.

Depending on the objectives of the research, values can be considered from a variety of positions and aspects. This reflects their (values) interdisciplinary nature as an object of study and their multifaceted nature as a theoretical model. Values are considered from the position of essential characteristics (values as properties of something), as phenomena (sensual, rational), as objects (spiritual, material), as temporal parameters (future, past, present), as elements of the measurement system

(ideals, standards, criteria), as elements of the structure of activity (goal, means, result), as scientific categories (abstract and concrete), as a characteristic of the direction of development (positive, negative, anti-values).

Value properties of any phenomena and objects arise when in the process of interaction there is a social context and their evaluation - determination of the significance, importance, value (price) of these phenomena and objects that have acquired relevance for society, a social group or an individual. The moment when a value is formalized or recognized is the fact that a choice has been made among alternatives.

Two groups of principles for the study of values in sociology are formulated.

The first group reveals the characteristics of values in a broad social context:

- The relevance of studying values along the axis: values of the individual - values of the group - values of society;

- Essential in analyzing the group values of IT professionals is the study of the harmony of group and personal goals;

- For the sociological analysis of IT specialists' values, it is of undoubted interest to identify the correlation between norms and values;

- G. Hofstede's ideas about the peculiarities of values within organizational structures - within professional organizations and groups - are of particular interest for the study of IT specialists' values;

- The sociological analysis of IT specialists' values implies their consideration at macro-, meso- and micro-levels.

The second group of principles aims the research at studying the special characteristics of IT professionals' professional values, important for their sociological interpretation:

- the presence of a dichotomy of professional values on the axis of personality - external environment;

- The importance of investigating intrapersonal professional values in the overall structure of professional values;

- expediency of analyzing the interaction between professional values of the individual and professional values of the social order as a condition for the emergence and development of professional values;

- recognizing the importance of the external micro-environment for the process of forming and realizing the potentials of professional values;

- classification (division) of values in the external micro-environment into two subgroups.

- mediated influence of professional values of the external macro-environment on professional values of the individual.

It is concluded that the empirical study of IT specialists' values is adequate to be carried out on a multi-paradigm basis.

Chapter 2. Empirical Study of the Sociodynamics of Integration of the Social-Professional Group of Russian IT Specialists: Value Paradigm

The sociodynamics of integration of IT specialists' values has several peculiarities and is characterized by social consequences. The social well-being within this group, as well as the prospects of the society within the framework of which this group is formed and functions, largely depends on what and what values are formed among IT specialists: the transformation of values of the group of IT specialists is connected with the development of all the main social institutions of modern societies, which entails a certain direction of social mutual changes.

The first chapter presented scientific data on the systemic nature of IT specialists' values, which are formed due to the specifics of the fast-growing IT industry. We concluded that the values of the socio-professional group of IT specialists can be analyzed based on a multi-paradigm methodology. The second chapter is structured according to these circumstances: the first paragraph presents methodological and methodological approaches to measuring the values of IT specialists in the digital society, the second and third paragraphs analyze the results of applying the multiparadigm method to the study of intragroup values of Russian IT specialists, and the fourth paragraph shows the results of the study of values of Russian IT specialists and their peculiarities against the background of IT specialists in other countries.

The intention of the empirical study is to examine the process of digitalization, which sets the dynamics and initiates the social progress of the digital society, which occurs ambiguously, and which leads to a variety of consequences. This circumstance required the use of new methodological and methodological approaches to conducting empirical sociological research -network methods [368] . Thanks to this in the process of empirical research there is an opportunity to search for relevant approaches and technologies of measuring social and professional values of IT-socialists, to identify special characteristics and meaningful criteria-signs of these values. The necessity to

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[368] Deryugin P. P. et al. Strategies of human capital diagnostics based on value analysis: presentation of empirical results// Editorial Board. 2020. C. 253-261.

develop a special diagnostic methodology is justified, firstly, by the research objectives, which presuppose the analysis of IT specialists' professional values in the general context of values. Secondly, the task was also to create a methodology applicable to representatives of various specialties included in the system of values of the digital society. The main focus of our study is on identifying differences in both the intragroup values of IT professionals and in the context of the social and professional development of IT groups. We also draw attention to the differences between IT groups and other social groups, where the values characteristic of the digital society acquire different degrees of priority.

In general, the results of the empirical study largely coincide with the results of authoritative researchers who emphasize the importance of studying the socio-professional qualities of IT specialists in conjunction with the qualities of collectivism, business qualities, communicative qualities, and those that define a "good person", which can be regarded as the main condition for increasing the human capital of IT specialists. Another feature of the empirical study was to investigate the dynamics of change in the values of IT specialists under the influence of the growth of IT technologies, which gives an idea of how the digital society is developing and changing.

2.1 Conceptualization and Key Points of the Empirical Research Program on the Sociodynamics of Integration of IT Specialists' Values

The main objective of the empirical study was defined as the collection and analysis of empirical data that adequately characterize the values of IT professionals, which were formed directly depending on the specifics of the industry. The analysis shows how the technological and social preferences of IT professionals regarding the development of the industry in Russia, China, USA and Brazil are shaped and how this affects their world of values.

First, we should note important features of the organization of the empirical study of IT specialists' values in Russia, China, the USA and Brazil. The effectiveness

of the empirical study is ensured by the consistent solution of specific **tasks.** Firstly, it is necessary to study the specifics of the formation of a professional group. Trends in the formation of value orientations of IT specialists are closely related to the peculiarities of the worldview in general, as well as to the specific socio-demographic, economic and cultural situation in a particular country. Consideration of such trends allows us to better visualize the specifics of each country and the worldview of IT specialists living in it. Thus, it is possible to highlight the specificities in the values and value orientations of IT professionals between countries.

Secondly, it is necessary to analyze the changes within the professional IT group. IT specialists become carriers of identity, formed because of other forms of interaction, a special language of communication, way of thinking, lifestyle, possession of expert knowledge [369]. On the one hand, this unification of professional group members makes it possible to separate IT industry workers from other professional groups. On the other hand, the internal structure of this group is quite differentiated and forms various social strata, social statuses, and roles, which leads to some peculiarities of analyzing the group itself [370]. For example, software development, testing, implementation, or maintenance require specialists of different profiles, nature of labor and orientation[371]. Since these professionals possess different levels of digital competence, the qualities that serve as value markers will be formed differently in these groups. In addition, in the IT sphere, different structures of relationships are built both at the external level of interaction - between IT departments, and at the internal level - between colleagues. Accordingly, when forming the methodology, the position of the respondents was considered.

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[369] Social capital of IT industry specialists: the conception of empirical research / Deryugin, P. P., Bannova, O. // All-Russian Scientific Conference: "Information - Communication - Society", 2 - 3 February 2022, St. Petersburg. SPb.: Izd-vo ETU "LETI", 2022. C. 19-21.

[370] P. P. Deryugin, O. S. Bannova, Yu Yang, Integration of IT specialists as a socio-professional group, Proceedings of the All-Russian Scientific Conference XVI Kovalev Readings

[371] Sociodynamics of values and value orientations of employees of Russian corporations: a network approach / Deryugin, P. P., Bannova O. S., et al. S. et al. // SPb: Izd-vo ETU "LETI", 2021, 150 p.

Stages of the empirical research. At the stage of pilot interviews a picture of IT industry employees was formed, key blocks for the social survey were identified. Attendance at specialized events, observation and consultations with IT industry specialists allowed us to define the requirements to the list of respondents. 48 people (from 18 to 44 years old, men and women, representatives of different qualification levels) took part in the interviews.

The interview script consisted of three blocks. The first block is devoted to motivational aspects of professional activity, interest in the given field. The second block includes questions about identity, lifestyle, communication with representatives of other professions, qualifications and differences between users, amateurs, and professionals. The third block reveals the assessment of IT development in Russia in comparison with other countries, competitiveness of Russian IT professionals.

By means of the method of analyzing the materials of in-depth interviews the model of professional community was constructed according to the inductive principle. The explanatory model, which became the basis for the sociological survey, gives an idea of the characteristics and qualities of IT specialists in 5 areas: attitude to professional activity, personal and professional qualities, attitudinal position, attitude to other people and digital competences. Due to the high level of digital literacy, the values of IT professionals become more individualized, manifested in particular in the diversity of choice of goals and methods in the professional sphere. This individualization is reflected in the inclusion in networks of social ties of different quality, where participants have different types of human capital.

Networks of information technology workers include not only social networks of communication and communication, but also information, computer, technical networks of connections, which act as the basis for connecting all systems to each other. The network society that Castells spoke about, where IT acts as a tool, complicates the internal structure of networks, adding new dimensions, conditions of existence and significance to them. Social networks, thanks to IT, acquire an element of virtuality, where spatial and temporal boundaries fade into the background. This

approach to analyzing commonality allows us to rethink the traditional facets of network analysis.

The inclusion of IT workers in global networks and communications results in the formation of their own culture[372] . Special preferences, work with the latest products, contacts with foreign countries, possession of expert knowledge cause the formation of a new view of socio-cultural reality. At this stage, a certain set of characteristics peculiar only to the representatives of a given community is manifested, which requires empirical study. Some of such characteristics are clothing style, leisure time, language of communication, consumption of goods and services, labor motivation, initiative, diligence, and other personal qualities necessary to perform work in the IT sphere.

As the analysis of interview materials shows, also important criteria for empirical research are the importance of "team spirit" prevailing over competition in favor of mutual assistance, technical curiosity, confidence in stability, improvement of knowledge and skills, availability of practical experience, communication skills, need for creativity, innovative potential. Identification of these characteristics is a key approach to the formation of a methodology for measuring the values of IT professionals. The obtained results allow us to determine several relevant conclusions about the characteristics of the professional group in Russia, the USA, China and Brazil.

Considering the above provisions, the empirical part of the study was organized **in two interrelated directions**.

1. *Collection of empirical data revealing the peculiarities of IT specialists' values.* During the research, the empirical data base was formed on the characteristics, qualities and preferences of IT specialists. Mainly the portrait of an IT specialist was

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[372] Deryugin P. P. et al. Sociodynamics of students' digital capital in the COVID-19 epidemiological crisis: experience of a mixed strategy empirical study //Discourse. 2021. T. 7. No. 4. C. 45-57.

formed through analyses of in-depth interviews with representatives of the IT industry, as well as with people who interact with IT specialists.

2. Collection of empirical data to study the *peculiarities in the values of IT professionals in Russia, China, USA and Brazil*. The main focus of our empirical study was to conduct extensive research activities among IT specialists and representatives of other professional groups in these countries. In this context, we distinguish three relatively autonomous blocks of information collected within this research area: research work directly among IT professionals, research work among professionals of other professions, and network research on IT professionals' values. Unity and differentiation of respondents' value networks (qualities as value orientations), and comparative analysis against the background of society's values.

In total, 1237 IT specialists and 253 specialists of other professions became **respondents of the** empirical study (Table 2.1.1). In accordance with the shown directions of the empirical research the results obtained will be presented in the following.

Table 2.1.1 Characteristics of respondents

Categories of respondents	Total person
IT specialists: developers, designers, administrators, analysts, QA (Russia)	274
Heads of IT companies (Russia)	108
IT support staff: technical support, HR (Russia)	125
US IT professionals	236
China's IT professionals	273
IT professionals in Brazil	221
Students of the Faculty of Technology (Russia)	274
Students of the Faculty of Humanities (Russia)	189
Representatives of other professional groups not related to the IT industry	253

IT specialists (developers, designers, administrators, analysts, QA) and designers (WEB-designers, UX-designers) - respondents in this category are both professionals with extensive experience in the industry and students just starting their professional journey. IT support staff - respondents in this category either plan their professional development within the position or use it as a starting point for further growth in other IT areas (programming, analytics). Heads of IT companies -

respondents in this category have relevant education, high qualification, have been in the position of an IT manager for more than 10 years. Representatives of other professional groups - respondents who do not interact either professionally or personally with IT specialists and are engaged in activities unrelated to the IT industry.

The conduct of the empirical part of the research was structured by stages: Table No. 2.1.2. presents the objectives, stages, directions and main methods of the research.

Table 2.1.2 Research stages and methods

		Stage 1 Preparatory	Stage 2 Approbation techniques	Stage 3 Basic	Stage 4 Final
Areas of research		**Objective:** Empirical research design and the exploratory nature of empirical data	**Objective:** Pilot studies, validation of methodologies	**Objective:** Gathering analytical information to structure data on the values of IT professionals	**Objective:** Systematise and formulate conclusions about the values of IT professionals and formalise the results
Professional identity IT professionals		**Interview:** Professional portrait of an IT specialist, specifics of the industry depending on the country (Russia, USA, China, Brazil).	**Essay:** On digital values	**Surveys:** - digital values - values of IT professionals	**Conclusions:** Models of sociodynamics of IT specialists' values in the digital society
Specificity of values in the IT group	IT specialists, representatives of other professions interacting with IT specialists	**Validation of a** quantitative methodology. **Approbation of a** qualitative methodology. - interviews with representatives of the IT group;	Questionnaire survey: Values of IT professionals Respondents: IT specialists, IT managers, IT support staff, representatives of other social groups interacting with IT		**Conclusions:** Models of sociodynamics of values in the digital society Methodology of network diagnostics of IT professionals' values in the digital society

Based on the empirical research conducted among IT professionals in Russia, China, the USA and Brazil, a picture of the peculiarities of value perceptions has been obtained, which confirms the need to systematize the values of IT professionals, as well as to conduct regular sociological research to identify value orientations. In the context of the topic, objectives, and hypotheses of the study, we needed to develop a methodological procedure for empirical research, capable of effectively recording and analyzing sociodynamic changes in the orientation and value orientations of IT professionals.

2.2 Intragroup Integration of Russian IT Specialists

The problematics of intragroup integration from purely theoretical cognitive interest becomes a practical topical aspect of management [373]. Therefore, addressing the research of intra-group integration of IT specialists as a special socio-professional group acquires a significant scientific perspective, since the growth of such groups soon and in the future is important for the Russian reality [374].

In sociology, IT specialists' intragroup integration should be regarded as a two-way process of harmonization of relations and interdependencies between the participants of joint activities - employees and organizations of the IT space, which is expressed in achieving coherence, orderliness and stability of all systems and intragroup processes based on the values of the digital society. Thus, in the present case, the intragroup integration of IT specialists is considered from the point of view of those internal processes and factors that turn them into a real integrated social group, whose activity is expressed in the achievement of common social results-consequences that allow us to speak of IT specialists as a single socio-professional group that

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[373] Vittikh V.A. Management as regulation of integrity relations // Problems of management and modelling in complex systems: Proceedings of the X International Conf. - Samara: Samara Scientific Centre of RAS, 2008. - C. 34-40.

[374] Monitoring of information society development in the Russian Federation. Federal State Statistics Service. URL : https://www.gks.ru/folder/14478 (date of circulation 10.11.2022).

achieves a high level of identity[375] . Such identity is the result of the reduction of various forms of intragroup social distance and differentiation, segregation, and encapsulation of separate professional locations of IT specialists and their consolidation as professionals of one sphere of activity, based on the unity of socio-cultural and professional goals and values as TI-specialists**.**

In sociology, intragroup integration-solidarity is analyzed depending on the aims and objectives of the research and can be studied in different strategies of such research[376]. One of such strategies can be characterized as the strategy of studying mechanical solidarity. This strategy is considered by A.V. Bedrik, studying the intragroup integration of ethnic migrants [377]. In this case, the methodological settings of the study of intragroup integration are based on the basic postulate that intragroup integration is conditioned by the peculiarities of the external environment - external forces and factors that affect the livelihoods of migrants.

The basic element of methodology in this case of intragroup integration research is the study of the central - again external to migrant actors - factors that influenced such integration [378]. These include two groups of reasons: the cumulative conditions of social risks of the host community and the ethno-cultural distance between the native population and migrants. The result of the influence of these external factors-force on intragroup integration is the potential of trust concentrated in the experience of

[375] Deryugin P.P., Yarmak O.V., Strashko E.V., Kamyshina E.A., Bannova O.S. Human capital in valuable orientations of students: methodology, methodology and diagnostic results // SHS Web of Conferences, Social and human sciences : theory and practice, no. 1 (5), 2021, pp. 215-227.

[376] Deryugin P. P., Bannova O. S, Yu Yang, Social and Professional Integration of IT Specialists in the Light of P.A. Sorokin's Ideas on the Dynamics of Social Development (To the 300th Anniversary of St. Petersburg State University), Collection of Round Table "Consolidation of Urban Communities: Problems of Diagnostics and Regulation"

[377] Bedrik A. V. Mechanisms of intragroup integration of ethnic migrants // Actual issues of social sciences: sociology, political science, philosophy, history. 2015. №7 (47). URL: https://cyberleninka.ru/article/n/mehanizmy-vnutrigruppovoy-integratsii-etnicheskih-migrantov (date of reference: 03.08.2022).

[378] Deriugin, P., Yarmak, O.V., Strashko, E.V., Kamyshina, E., Bannova, O.S. (2022). Integration of human and social capital: the experience of Russian, Chinese and European corporations. SHS Web of Conferences.

interaction (G. Simmel) [379]. Such integration is of a purely "mechanical" nature, i.e. as "social solidarity, originating from the fact that a known number of states of consciousness are common to all members of the same society" [380]. This common consciousness manifests itself as "a set of beliefs and feelings common to members of the same society .... It is independent of the private conditions in which individuals find themselves; they pass away, and it remains" [381]. In accordance with the position of E. Durkheim, mechanical integration-solidarity, is based on the complete dissolution of individual consciousnesses in the collective consciousness and arises based on the mechanism of opposition of a certain social group to the community within which this group operates. Mechanical solidarity can be regarded as forced and rests on the confidence of group members in the ability of their group not on the belief in the individual honesty of each of its members, but on the ability of the group to force any individual member to comply with the terms of interaction[382].

Based on the analysis of the characteristic features of the external situation, the author has identified some types of mechanical group cohesion: situational and reactive (here the temporal nature of the association is important, how quickly solidarity is manifested), mobilization (i.e. related to the importance of achieving a common goal) and crisis (the emergence of contradictions with the external environment)[383]. In any case, the basic idea of the research strategy of mechanical solidarity is evident: from the external circumstances in which the group operates - to the analysis of in-group solidarity processes - such as trust.[384] The author emphasizes this fundamental

[379] Stoyanov K. Trust and alienation: aspects of G. Simmel's sociological concept. Simmel // Economics and Sociology of Trust / Edited by Y.V. Veselov. Y.V. Veselov. - St. Petersburg: Kovalevsky Sociological Society. M.M. Kovalevsky Sociological Society, 2004. C. 32-49. C. 33-34.

[380] Durkheim E. On the Division of Social Labour. The Method of Sociology. - Moscow: Nauka, 1990. - 576 c. C. 108.

[381] Durkheim E. On the Division of Social Labour. The Method of Sociology. - Moscow: Nauka, 1990. - 576 c. C. 80.

[382] Barsukova S.Y. Forced trust of the network world // Polis. Political Studies. 2001. № 2. C. 52-61. C. 53.

[383] Bedrik A.V. Social adaptation of ethnic migrants in Rostov Oblast. Rostov-n/D, 2007. - 144 c. C. 50.

[384] Sociological research of identification behavior strategies in closed educational institutions: value context (on the example of cadets of Cossack cadet corps) / Deryugin, P. P., Popov, R. E.,

condition of integration, which "occurs through migrants' awareness of their ethno-cultural distinctiveness from the host community"[385] . In conditions of mechanical solidarity, such "awareness" is formed as a reaction to conflicts and risks of being in a foreign ethnic environment and is forced and compensatory in nature[386] . But despite all the problematic and complex formation of mechanical integration, it is the only condition for successful adaptation and socialization[387] .

Organic solidarity. In our opinion, based on the characteristics of the socio-professional group of IT specialists shown in the first chapter, the integration of this group according to E. Durkheim's classification, on the contrary, should be defined as organic. Organic solidarity-integration is based on the autonomy of individuals, which is ensured by the distribution of functions, justified functional interdependence and cooperation as mutual exchange, "on consensus, the possibility of compromises and mutual agreements between individuals and social groups that differ from each other"[388] , which, as we have seen earlier, corresponds to the main features-characteristics of socio-professional groups of IT specialists.

The generalization of the shown studies allows us to characterize the criteria on the basis of which certain categories of IT specialists are distinguished, as well as the indicators, the analysis of which was applied for the study of intragroup processes in IT communities (Table No. 2.2.1).

Bannova, O., Kurapov, S. // X International Scientific Conference "Sociology of Religion in Late Modern Society: Religion and Values", 15-17 April 2021, Vol. 10. C. 229-237.

[385] Bedrik A.V. Social adaptation of ethnic migrants in Rostov Oblast. Rostov-n/D, 2007. - 144 c. C. 50.

[386] Bannova O. S et al. "Own world" values of IT speciality students, Proceedings of the International Conference on Natural and Humanities. St. Petersburg State University. 2021. C. 889-890.

[387] Bedrik A. V. Mechanisms of intragroup integration of ethnic migrants // Actual issues of social sciences: sociology, political science, philosophy, history. 2015. №7 (47). URL: https://cyberleninka.ru/article/n/mehanizmy-vnutrigruppovoy-integratsii-etnicheskih-migrantov (date of reference: 03.08.2022).

[388] Romashkina G. F. Formation of organic solidarity in the youth environment // Education and Science. 2014. №9 (118). C. 71.

Table No. 2.2.1. Criteria for differentiation of IT specialists

Criteria differentiations	Immediate measurement indicators
Scope of IT activities	Determination of subgroup membership
Level of professional mastery of IT activities	Identification of educational attainment
Extent of formal inclusion in the IT staffing structure of the activity	Determining whether you belong to an IT company
Nature of participation in professional project activities	Defining the role and status of TI specialists in project work
Age	Number of years lived
Software used	Software analysis
Preferred brand of equipment in operation	Analysis of equipment brands
Objects or subjects with which the IT specialist interacts	Identification and characterisation of objects and subjects of interaction
Nature of functions performed in IT activities	Description and analysis of functions
Degree of mastery of professional activities	Identification of the level of professional activity

The research objectives related to the analysis of differentiation of the internal environment of IT communities rightly include the study of those parameters and indicators shown in the above table. Spheres of IT specialists' activity, age, inclusion in the staff and other criteria are undoubtedly important for forming an objective picture in characterizing the social structure of such specialists' activity. As for the objectives of the present study, its interests presuppose the identification of intragroup characteristics that reveal social integration at the level of the emergence of a synergetic effect - the emergence of social capital reflecting the degree of integration of relations. Here it is important to emphasize that social capital is formed on the basis of values, norms and rules of social relations, which make it possible to coordinate people's actions to achieve desired goals[389] , i.e. integration, in particular, the values of IT company employees, can be considered a kind of precursor, the basis of cohesion and solidarity[390] . It is important for us to identify the system of values based on which such elements of social capital are formed, which characterize "social ties and the ways in which they are created"; "trust that ensures the action of the members of society as a

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[389] Putnam R. Making Democracy Work. Civic Tradition in Modern Italy. Princeton: Princeton University Press, 1993. P. 45.

[390] The phenomenon of "guanxi" as social capital / Deryugin, P. P., Sidorova, A. N., Popov, R. E., Bannova, O. S. // Proceedings of the All-Russian Conference on Natural Sciences and Humanities with International Participation. St. Petersburg, 2021. C. 842-844.

whole"; "norms and rules that strengthen trust"; "institutions that ensure the functioning of society"[391] .

The need for theoretical conceptualization of approaches to measuring the digital values of specialists of various professional orientations, formed under the influence of digitalization, and identifying the main content and features of the sociodynamics of these digital values, implies the specification of the main concepts and categories to be used in the empirical study[392] . Operationalization of the main concepts:

IT specialists are a group of professionals who have a common feature - they are directly or indirectly involved in the process of information transformation to varying degrees, perform operations with information to obtain a new level of information suitable for use in a variety of areas of society and perform their duties mainly on a paid basis.

Subgroups of IT professionals. IT professionals involved to varying degrees in activities with information, they fall into three subgroups: 1. **Developers** - those who are *directly involved in the process of transforming information for its use* - these are web designers, testers, programmers, system administrators, big data analysts, Machine Learning specialists, and many others[393] , who have a high level of knowledge, skills and abilities that ensure the realization of their digital competences; 2. **Managers** - those who manage IT staff and have competences *important for the organization of IT* companies' *intra-group activities to produce the* necessary

Intragroup socio-professional integration of IT specialists - acceptance by IT specialists of each other and establishment of optimal system-network stable ties based on common values, ensuring inclusion in the process of information transformation in the interests of its conversion to a new level, it is such a solidarity social interaction,

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[391] Fedotov L. P. Extra-economic capital and its role in understanding society // Knowledge. Understanding. Mindfulness. 2006. № 2. С. 230-235.

[392] Deryugin P.P., Bannova O.S. Intragroup differentiation of IT specialists in the context of ideas of P.A. Sorokin's concept of sociodynamics, Collection of the International Scientific Conference "Sociology of Religion in the Society of Late Modernity: Religion and Youth"

[393] Pavlenko A. IT-specialist - who is it? What does an IT specialist do? https://otus.ru/nest/post/1396/ (Date of address: 29.08.2022)

which ensures coherent activity of subgroups of IT specialists on transformation of primary information into information suitable for use.

The socio-professional group of IT specialists *is an* association of people who share a common social attribute - involvement in direct or indirect participation in working with information (working directly with IT technologies, IT equipment and indirectly, for example, promoting IT products, which also implies involvement in the IT environment), arising at a special stage of society development - with the beginning of the formation of digital social space. In any case, the whole set of IT specialists relates to information, which acts for them as the central object and the main value of professional activity with the most important attribute - they consider and use IT activity as a source of existence and labor, for which the IT specialist receives income.

The social-professional group of IT specialists, the nature of its emergence and functioning, is inherently subjective and volitional; such groups are created because of realization of purposeful interests of social institutions and individuals. Here we are also talking about the unification of a certain number of people, because of which a synergetic effect arises (perhaps not).

Values are any facts (phenomena) of material or spiritual nature (goals, means, results) that have important and actual - valuable significance, playing a decisive role in the choice of alternatives and determining the behavior and activity of an individual and society. At the level of the individual, values are a systemic formation that is expressed in attitudes, beliefs, and orientations. At the level of society and its social institutions, values manifest themselves in the form of norms, principles and rules that orient the direction and nature of social development. The strategic directions in the formation of values are knowledge in conjunction with practical experience[394] .

The sensual values of IT specialists *are a* set of attitudes and orientations in relation to the information product, information in general, which are important,

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[394] Values as the basis of interaction of Russian IT-specialists with representatives of other social groups (empirical study design) / Deryugin, P. P., Bannova, O. // All-Russian Scientific Conference: "Information - Communication - Society", 2 - 3 February 2023 St. Petersburg. SPb.: Izd-vo SPbGETU "LETI", 2023. C. 28-31.

significant, and valuable determine the choice of alternatives with a focus on the satisfaction of practical benefits and are of a material-practical nature. In the context of sensual values IT activity is considered mainly as a means of solving specific tasks. The main features of IT-specialists who share sensual values are the utilitarian attitude to IT-production, forming practical benefit as the main goal of activity; understanding of IT-activity as a means of achieving life's pleasures and pleasures, bringing satisfaction of needs "here and now"; aspiration to transform the external environment on the basis of IT-technologies; readiness to compete on the IT market; understanding of technical and technological innovations as new opportunities for quick achievement of specific results; willingness to compete on the IT-market; willingness to use IT-technologies as a means of solving specific tasks. Extreme forms of manifestations of IT specialists' sensual values lead to relativism, skepticism towards spiritual life and morality, and nihilism. In different subgroups of IT specialists' sensual values are formed and manifested with different degrees of activity[395] .

Ideational values of IT specialists are attitudes and orientations in the context of which the results and means of IT activity are realized as significant in themselves, without special recognition of the priority of their pragmatic significance. The virtual world and its ideal essence are understood as meaningful, perhaps even without any interaction with the real world. The needs and goals of the virtual space, the degree of their satisfaction is the most maximized, allowing for the minimization of any physical needs. Orientations to IT space, its spirit and its means become ideals. Ideational values are formed under the influence of the subgroups' activity peculiarities and are primarily inherent in those IT specialists who work with abstract objects. IT professionals who share ideational values are characterized by the inspiration of confidence in their uniqueness as IT professionals, closed team spirit and limited communication environment; focus on abstract intellectual experiences and hyper-concentration on

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[395] Bannova O.S., Maranchak A.G., Kurazhev S.D. Features of professional shift of perception of values of digital society among students of IT-specialties (conception of empirical research), in Collection: Russian society in the kaleidoscope of global transformations: Optics of young sociologists. City sociological seminar. St. Petersburg, 2023. C. 4-5.

their inner world; focus on spiritual self-improvement and the need for creative self-expression. In general, IT-specialists who share ideational values consider self-improvement and the ability to transform to the conditions of the external environment as the main means of achieving goals. The value of scientific knowledge is identified with spiritual and idealistic laws. Extreme forms of idealistic values of IT specialists form dogmatic strategies of activity and any material aspect of social reality is displaced.

Scientific values of IT specialists - reveal IT specialists' assessment of the role and relevance of scientific knowledge in IT activities, evaluation of their work results in terms of mastering scientific principles, regularities, connections, properties, and phenomena in the IT sphere. They are expressed in the belief in scientific and technical progress, new methods, and models of information activity, as well as in the transformation of ideas about the formation of a digital society. These values are manifested in the desire to master new technologies and new IT equipment providing a rational approach to solving any tasks of IT production, development of modern techniques that increase the speed of work with information.

Multiparadigmality According to V.A. Yadov, multiparadigmality in modern sociology provides "such a systematic view of the interrelations of different theories that includes: (a) acceptance of some philosophical ("metaphysical") idea of the social world common to these theories with an answer to the criterion question: what is "social"? (b) acceptance of some general principles, criteria of validity and reliability of knowledge concerning social processes and phenomena and, finally, (c) acceptance of some general range of problems to be or not to be investigated within the given paradigm"[396] . "In addition, a variety of theoretical approaches help to analyze the scope of autonomy and power of professionals, the specificity of their relationships"[397]

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[396] Yadov V. A. Possibilities of combining theoretical paradigms in sociology. C. 6. // Sociological Journal. 2003.- № 3.- C. 5-20.

[397] Mansurov V.A., Yurchenko O.. V. Sociology of professional groups: history of formation and prospects // Bulletin of the Institute of Sociology. 2013. №7. C. 101.

. In particular, the principles and methodological foundations of the presented concepts were actively used by us in forming the idea and methods of the research.

In sociological understanding of values as a system, several fundamental provisions have emerged, guided by which it is possible to form a conceptual model, on the basis of which the design of an empirical study can be built.

Intra-group integration of Russian IT professionals, as a process of uniting IT teams and employees within a company working on common projects and goals, is an important factor for the success of IT organizations[398] . Group cohesion of Russian IT professionals is the extent to which relationships between IT team members are strengthened and their willingness to work together and achieve common goals.

Based on the classification of sociocultural formations that were described by P.A. Sorokin[399] , a questionnaire including 50 questions was created. These questions reflected five groups of values: sensual and ideal values, which, according to P.A. Sorokin, determine the success of social integration, as well as values related to professional integration: attitudes towards IT product development (hereinafter we will call them "digital values"), attitudes towards other people and values describing scientific and attitudinal positions of IT specialists.

The first part of the study was based on quantitative indicators, where values are considered as a valid basis for the integration of IT professionals, IT managers and IT support staff. The second part of the study was defined as qualitative and involved identifying perceptions of the characteristics and values of contemporary IT professionals, the second part examines the networks of relationships between these subgroups.

The results of the study, obtained using correlation analysis, allowed to identify the weighting characteristics of the five groups of values, as well as the links between

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[398] Conversion of human and social capitals in corporations: transregional studies on the example of Russian, Chinese and European corporations (part 1) / Deryugin P.P., Kremnev E.V., Yarmak O.V., Strashko E.V., Kamyshina E.A., Bannova O.S. // Modern Oriental Studies. 2021. Т. 3. № 4. С. 619-637.

[399] Sorokin P.A. M. Social and Cultural Dynamics. Astrel, 2006.- 1176 p.

them. Networks of values of subgroups of IT specialists were constructed, which allowed to get a deeper understanding of their value orientations.

The model of the value system of the socio-professional group of Russian IT specialists was formed based on the results of empirical research and is presented in Figure 2.2.2.

Локация ценностей субгруппы ИТ-разработчиков

Локация ценностей субгруппы ИТ-обеспечения

Локация ценностей субгруппы руководителей ИТ-специалистов

Чувственные ценности (преобразование внешней среды)

Идеациональные ценности (самоанализ, преобразование самого себя)

Наука как ценность

Другой человек как ценность
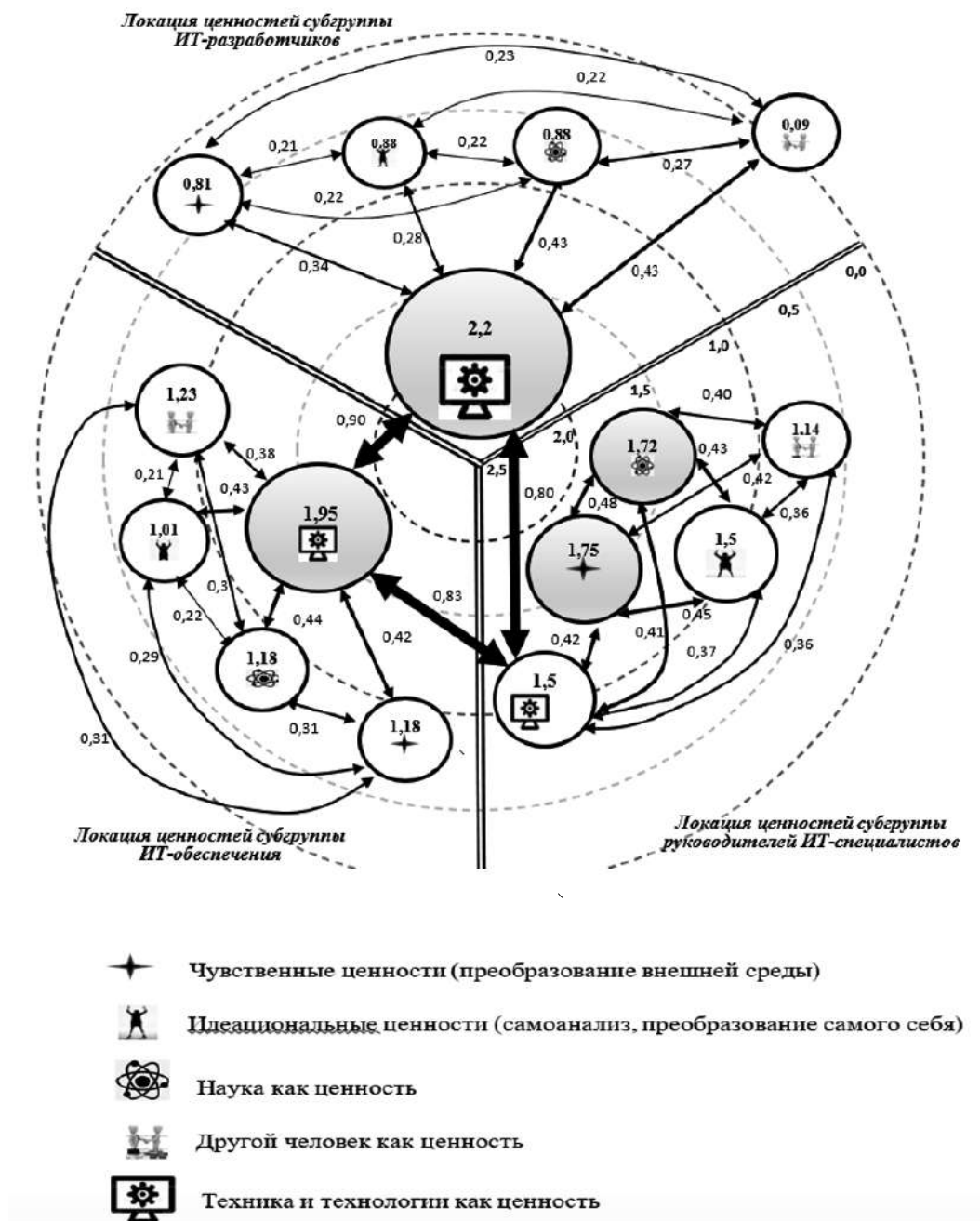
Техника и технологии как ценность

Fig. № 2.2.2. Model of values locations of socio-professional subgroups of IT specialists

The presented model of the value system of the socio-professional group of Russian IT specialists shows three groups of actors whose values reflect different integration effects: executives (managers) who have IT specialists in their subordination (hereinafter - "executives", including top managers of IT companies), IT developers themselves, programmers and designers who work in Russia (hereinafter - "IT developers"), and employees of companies who interact with IT specialists, are engaged in related, auxiliary and supporting activities. "The term "IT-specialists" is used in our case as a generalization of all three categories of respondents.

The core of the value system. According to the data of the empirical study, the core of the network of values of the socio-professional group of IT specialists is made up of the weightiest nodes-indicators, which are in the center of the model, the total weight of such nodes gained the maximum values of the coefficient of value potential from 1.72 to 2, 20 points. The quantitative indicators of these values are the highest. The core of the value network consists of digital values of IT developers (Kcpc=2.2) in combination with the same values of the subgroup of IT company support (Kcpc=1.95). This is the most significant integration of digital values. Let us emphasize an important detail, between the digital values of IT developers and IT support employees a significant internal relationship was revealed (the correlation coefficient of these values is Kc=0.90, i.e. it is almost complete identity in recognition of the hierarchy and importance of these values, their high level and almost complete identity-integration).

This identity reveals the sameness, priority understanding of certain indicators, their value, significance, and importance in the implementation of the digital component in the activities of an IT company. This reveals the priority attention to any digital, technical, and technological problems in the activities of IT developers and IT group support staff, the priority attitude in solving problems in this social space. Thus, the core values of IT groups are represented by the aspirations of digital, technical, and technological development of IT developers and IT group support staff.

Among the studied specific indicators of sentient values, the highest level of value network potential is characterized by indicator nodes such as the ability to secure oneself in the digital environment (Kcps=0.61) - the first rating, and skills of building communication using ICT (Kcps=0.60) - the second rating. It is these two indicators that, according to the interviewed respondents, form the basic foundations of the IT developers' value network. They reveal a rather revealing situation - the importance of active participation in the digital environment combined with the relevance of building secure communication and communication with other network users.

At the same time, a curious situation revealing the differentiation of interests and orientations of IT specialists is noted, which is as follows. Among the indicators of digital competences, the respondents noted the ability to work with software (software) as the most important one in terms of absolute values. However, for example, for managers of IT companies this parameter was on the penultimate places in terms of importance (cf. rank 3.92 on a 5-point scale), as well as for support staff (3.91). According to the results of the surveys, only IT developers (4.35) ranked the work with software in the first place as the most important value. As for the correlation of this indicator with the indicators of other orders, the coefficient of value potential (Kcps) of this node in the general network of values of IT group specialists has decreased. This fact reveals the differentiation of the environment of the socio-professional group of IT specialists, reveals the dependence of personal values of IT specialists as dependent on the profile and nature of activity, as well as the relevance of the discussion of this and similar situations as conditions affecting the overall integration of the socio-professional group of IT specialists. A similar situation occurs with high results of evaluation of the value network indicator nodes reflecting the peculiarities of communication in the digital space - the importance of respectful attitude to the participants of the digital environment (Kcps=0.57) and the importance of maintaining decency in this environment (Kcps=0.57). But, as the in-depth analysis shows, these parameters are assessed differently by representatives of subgroups of IT professionals.

This is an important parameter for IT managers, and it is significantly lower in values for IT developers.

In the core of the value network of IT specialists as the most significant are the sensual and scientific values of IT group leaders (Corresponding values of Kcps = 1.75 and 1.72). On the one hand, this fact indicates the importance and significance of these values as a guiding force in the IT company's activities. On the other hand, it is another example of differentiation of values in IT groups. If for managers sensual values, which aim activity at changing and transforming the external environment, constitute the leading value (Кцпс=1.75), then for the subgroup of IT developers this value, its importance, is more than two times less relevant (Кцпс=0.81).

The cumulative weight of the values of the shown core is 41% of the weight of the whole system of IT specialists' values. At the same time, it is important to note another circumstance that strengthens the value characteristics of the core. It is the significance of digital competences, their relevance and importance for IT executives (coefficient of the value potential of digital values of executives Kcps= 1.5 points). These values of IT executives are significantly integrated with the digital and technical values of both IT developers and IT support (Kc=0.83 with IT support and 0.80 with IT developers, i.e. highly integrated links). Thus, it can be said that the core values of the IT company are reinforced by the digital and technological values of the IT executives and as a result, the total weight of the IT group's core value system will be equal to about half the weight of the entire value system (49 per cent). Hence the important conclusion that in the value system of the socio-professional group of IT specialists the values and value orientations of the digital, technical, and technological order are deeply integrated and are the leading social force for the development of IT companies. An important feature in the characteristics of the core values of IT companies is its orientation to the external environment, as well as the links with scientific values, which express the motivation of the activities of the leaders of IT organizations, their sensual and scientific values.

Characterizing the core of the network of values of the socio-professional group of IT specialists, its significant position and importance should be noted. As noted earlier, the weight of this core is significant, making up about half of the weight of the entire network. These are predominantly digital-technical values in combination with a focus on changing the external environment based on a scientific base. If we compare the technical values of the core on the one hand, and on the other hand the focus on the transformation of the external environment and the values of the scientific organization of IT specialists' activities, the ratio of network characteristics - weights and links of nodes - will be approximately equal. This fact shows the rational-pragmatic component of the core of the IT specialists' value network.

Periphery. *Values of the subgroup of IT executives.* The group of IT-company executives is a small group of IT specialists in terms of its size. However, among the values of other representatives of the socio-professional group of Russian IT specialists, the values of CEOs are the most integrated within their subgroup. This is the most integrated-cohesive subgroup in terms of the characteristics of values integration. Table 2.2.3 shows the comparative characteristics of values integration of the three subgroups under consideration.

Table No. 2.2.3 Comparative characteristics of IT subgroup integration

Subgroups	Total weight of nodes in the value subsystem	Number of network links	Total value potential of the subgroup
Managers	1,5	0,41	0,62
IT developers	0,9	0,29	0,26
IT support	1,3	0,33	0,43

As can be seen from Table No., the values of managers (Kcps=0.62) are one and a half times more integrated than those of IT support staff (Kcps=43) and almost three times more integrated than those of IT developers (Kcps=0.26). A distinctive feature of the value network of managers is the fact that digital, technical, and technological values in this network are approximately in the middle of the hierarchy with other values, in contrast to all other representatives of the socio-professional group of IT specialists. This is the only subgroup where values of the sensual order take center

stage in the entire subgroup value network. In this subsystem of values, competitiveness is recognized as the most important for managers (4.62 on a 5-point scale), and it leads the survey with a gap in relation to other values. It is also characteristic of the following: competitiveness is followed by such quality as self-sufficiency, freedom in decision-making, aspiration to avoid any forms of control and rigid work schedule (4.23 in 5-point scale). The next most important quality is recognizing the importance of IT activities and the need for special treatment (4.15). In other words, managers of IT companies are more focused on solving some practical tasks, exercising freedom of choice, and realizing the company's capabilities in the external environment, and asserting themselves as a significant actor in the external environment.

Characterizing the subgroup of managers, one cannot but mention the important role of scientific values in their worldview. Let us recall that these values are part of the core values of the socio-professional group of IT specialists in terms of strength and significance. This peculiarity of attitude to scientific values is characteristic mainly of managers. Belief in technical progress and aspiration to master new technologies occupy the central places in the subsystem of values of this subgroup (4.15 cumulative ranks of both indicators). The scientific values of IT managers are connected with all other values by a significant connection, Kc is more than 0.4, and this connection with sensual values is the maximum - 0.48, which emphasizes the practical orientation in mastering scientific knowledge and selection of those that contribute to solving practical problems in the work of IT managers.

IT-company executives have complete harmony of sensual and ideal values, with their Kcps evaluated equally - 1.5 points each. From P. Sorokin's point of view, such situations are quite rare and characterize harmonious people.

Thus, the values of IT executives are characterized by the greatest integration, harmony, and strength of connectedness. In the present case, we observe networks of values that significantly influence the formation of the general orientation of the entire

network of IT specialists' values, which determines the leading role of IT managers in the orientation of the main trends of IT companies' development.

Values of the IT developer's subgroup. The subsystem of IT developers' values, on the contrary, turned out to be the least connected. Recall that the overall value potential of the IT-developers network was recorded as the most insignificant, in total Kcps=0.26. Minimal network values of the coefficient of the value potential of the IT developers' network Kcpc were recorded for all other groups of values (Table No. 2.2.4), except for Kcpc of digital, technical, and technological values, where such value coefficients turned out to be significantly higher (Kcpc=2.2) than, say, for IT group managers. (Table No. 2.2.4) In general, the coefficient of value potential of digital, technical, and technological values among IT developers is the highest for all subgroups and for all indicators in the IT company (Kcps=2.2).

Table No. 2.2.4 Value potential coefficient (VPC) of subsystems of the value network of the socio-professional IT group

Subgroups	Sensual values	Ideational values	Scientific values	The human being as a value	Technical values	Total
Managers	1,75	1,5	1,72	1,14	1,5	1,5
IT developers	0,81	0,88	0,88	0.09 min	2.2 mah	0,97
IT support	1,18	1,01	1,18	1,23	1,95	1,3
Total	**1,25**	**1,13**	**1,26**	**0,82**	**1,88**	**1,26**

In terms of importance, the values of the technical order of IT developers are followed by scientific values (Kcps=0.88, the connection of these values with other values is insignificant, average Ksv=0.23) and ideal values (Kcps=0.88, as well as scientific values, Ksv=0.19, slightly lower than scientific values). It should also be emphasised that ideal values are the least included in connections with other values in this subsystem. The smallest Kcv in the system of IT developers' values turned out to be when assessing another person as a value, only 0.09. This is more than two times less than the Kcps of technical values of IT developers. In general, this is the lowest indicator according to the results of the analysis of Kcps for all other indicators of all groups of values and all other respondents. Among the qualities of another person proposed for evaluation, IT developers noted the importance of loyal attitude to

representatives of other social groups (4.0 out of possible 5 points) and the importance of establishing network interpersonal relationships (3.5 points), all other qualities scored lower.

It also draws attention to the fact that only technical links in the network of IT developers' values gain those values that differ from the statistical error, i.e. equal to 3 or more points (See Table No. 2.2.5).

As can be seen, all the correlations of digital and technical values with other values among IT developers ranged from 0.28 to 4.3. In practical terms, this means that human, scientific, worldview values are correlated, analyzed, classified - in a word, recognized as valuable or important - only in comparison with digital and technical values.

Table No. 2.2.5 Connection coefficient in subsystems of IT specialists' values (total Csv for each value group divided by 5).

	Sensual values	Ideational values	Scientific values	The human being as a value	Technical values
Sensual values	0				
Ideational values	0,21	0			
Scientific values	0,22	0,22	0		
The human being as a value	0,23	0,22	0,27	0	
Technical values	0,34	0,28	0,43	0,43	0
Total	0,2	0,19	0,23	0,23	0,30

Values of practical application of the results of their labor are significantly less important for them, (Kcp of sensual values =0.81), which also correlate with values of a techno-technological order in determining their importance. This is almost the same for idealization and scientific values: they are important to the extent that these values affect values of a techno-technological nature and as they relate to the values of the digital society.

Here it is appropriate to discuss once again the attitude of IT specialists to other people as a value. It is characteristic that the weight characteristics of IT specialists' value of other people are minimal (Kcps=0.09), however, the degree of correlation

between the value of other people and technical values is quite high, Ksv=0.43. In other words, IT developers recognize the authority and importance of other people through the prism of these people's mastery of the digital world. Therefore, gaining the respect and attention of IT developers is likely to be possible only through participation in this digital space - in a world of values they understand and accept.

Characterizing in a general sense the values of the IT developers' subgroup sector, it should be emphasized that the most opposing situations are formed in this subsystem of values. The most relevant point is the presence of maximum values of the network of values - values of digital, technical, and technological order and minimum values - values of attitude to another person. This subsystem has the weakest internal links between the indicators-nodes of values. The subsystem of digital, technical-technological values of IT developers relates to digital, technical-technological values of all other categories of respondents by the most significant connections, Ksv from 0.80 and higher. This fact once again emphasizes the importance of the unity of digital values as a unifying factor of IT specialists as a socio-professional group.

The subsystem of values of IT support group employees. According to several indicators, the values subsystem of this subgroup occupies an intermediate position between the subsystems of IT group managers and IT developers in terms of its network characteristics. This applies both to the weight values of the value indicators and the characteristics of the links and general coefficients of the value potential of the network (See Table No. 2.2.6).

Table No. 2.2.6 Main characteristics of the value networks of employees in IT organizations

Subgroups	Weight of nodes	Node links	Value potential of the subsystem
Managers	1,5	0,41	0,62
IT developers	0,9	0,29	0,26
IT support	1,3	0,33	0,43

Attention is drawn to the "moderate" nature of the links between the nodes of the IT support staff network. Connections between nodes of values in the present case

are measured by indicators more than 3.0, they are maximum between digital, technical-technological values and values of science, Ksv=0.43. The minimum coefficients of values connectivity are characteristic for the links of ideal values with the values of other person and science values (Ksv=0.21 and 0.22 - respectively) (See Table No. 2.2.7).

Values of the ideational order in this subsystem are minimal, slightly more than 1, total Kcps=1.01. But the values of the sensual order, marking the connection with practice and practical activity, are significant in them, Ksv=0.27 (See Table 2.2.7), this indicator is higher only in the heads of IT-companies.

Table No. 2.2.7 Connection coefficient in non-IT employees' value subsystems (total Csv for each value group divided by 5)

	Sensual values	Ideational values	Scientific values	The human being as a value	Technical values
Sensual values	-				
Ideational values	0,29	-			
Scientific values	0,31	0,22	-		
The human being as a value	0,31	0,21	0,30	-	
Technical values	0,42	0,43	0,44	0,38	-
Total	0,27	0,20	0,25	0,24	0,33

As already mentioned, the values of the digital, technical, and technological order of IT support staff are strongly linked to the digital and technical and technological values of IT developers, Ksv=0.90, and to the same values of IT managers, Ksv=0.83. This fact shows that there are no random people in IT groups. Even in the positions of service and support staff there are people for whom the world of values of the digital society is significant and important. Against the background of IT developers, the support staff of IT companies are more pragmatic, with a sensual values coefficient of 1.18. At the same time, the connection of sensual and digital, technical values is more pronounced, Ksv=0.42. This connection is even more characteristic when assessing scientific values (Kcps=1,18), where Ksv=0,44. Service personnel are characterized by a more significant attitude towards other people (Kcps=1.23) than IT developers and IT managers. Among human qualities, the most

important are the ability to establish networking interpersonal relationships and develop direct contact relationships.

In general, characterizing this subgroup, it should be emphasized that even if they are not, IT developers, representatives of this socio-professional group are involved in digital and technical values. It is characteristic that purely human qualities are important for them, a generally positive understanding of the role of another person: a person is a value that is important and relevant (the density of connection between the values of another person and digital and technical values among IT support personnel is the lowest, compared to the data on managers and IT developers).

Intragroup integration of Russian IT specialists. The main results of empirical research.

1.   *Digital competences as a value.* The intragroup integration of IT specialists at the level of values and value orientations is differentiated based on different degrees of their active inclusion in the process of forming the digital space. The greatest degree of inclusion in the digital space and its values is expressed in the growth of digital competences reflecting the most important values of the digital society. At the same time, it should be noted that this is not just a problem of obtaining specialised higher education[400] . The values of the digital society are learnt by different categories of personnel in IT groups with varying degrees of activity. Thus, the values of IT group leaders are formed at the intersection between the need to consider and meet the needs of real social communities (consumers, customers, competitors, etc.) and participants in the digital space (IT professionals, producers of digital products, support and auxiliary staff of IT companies). Due to these circumstances, the values of IT group leaders are oriented to the maximum extent and inevitably to meet the needs of both the real society and the interests of virtual space development - the interests of IT product manufacturers. The next in the degree of orientation to the needs of modern

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[400] Grinstein G. Higher education and IT - current realities and prospects, opinions and experience of experts // Habrahabr: an online resource for IT-specialists. 12 January 2017. URL: https:// habrahabr.ru/post/319342 (date of address: 13.06.2022).

society are the employees who ensure the activities of IT developers. They include managers, marketers, advertisers, suppliers, and other employees of IT groups who are connected with the production of digital products, but only indirectly. Nevertheless, among the representatives of this subgroup there are often specialists who can be safely classified as IT professionals by the level of digital competences. The values of IT developers, who are professionally engaged in IT activities and the production of IT products, are predominantly oriented towards the needs and values of the digital space. Due to this circumstance, their digital competences, as a reflection of the values of the digital space, are the most formed in relation to the technical and technological components of the digital society. The general situation of digital competences formation in different categories of participants of the socio-professional IT group is shown in Figure 2.2.1.
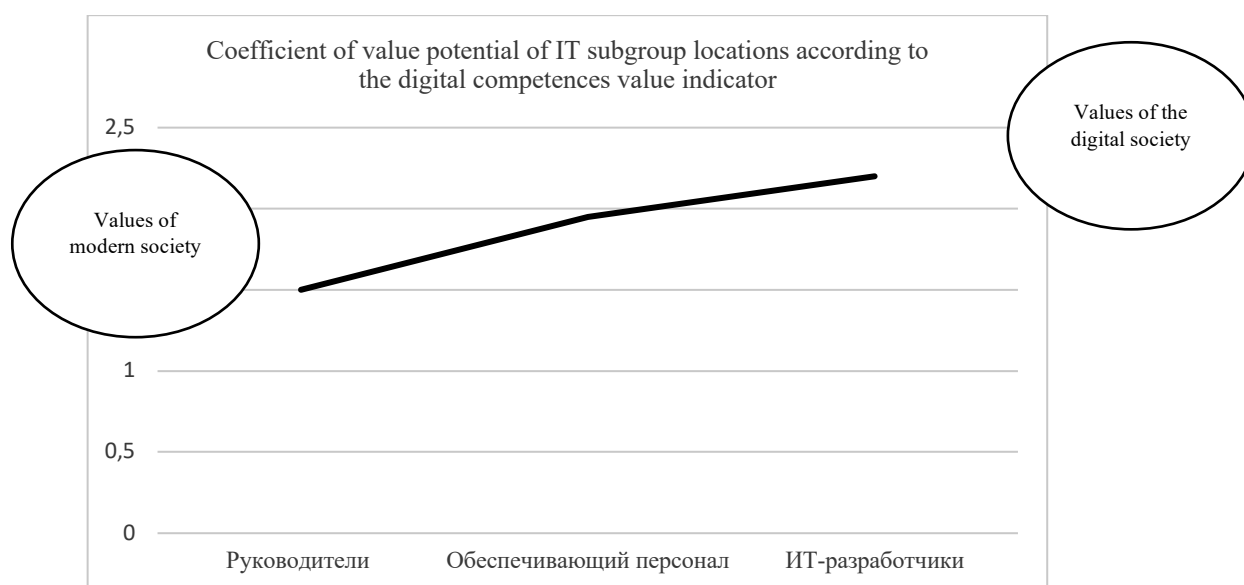
Figure No. 2.2.1 Coefficient of value potential of IT subgroup locations according to the digital competences value indicator

The important role of digital competences is conditioned by the specifics of IT specialists' work. This conclusion coincides with the conclusions of other researchers: "The specifics of IT specialists' work presuppose that each representative of the group has a certain amount of common knowledge and skills, which should lead to the

formation of a strong professional identity"[401]. The dynamics shown reflects the external side of the growth of digital competences. As for the internal characterization of these dynamics, the empirical study shows that there is a high level of correlation between the indicators of digital competences among all categories of IT group members, in particular about the hierarchy of digital values, their structure and interrelationships. According to the results of the empirical study, it can be stated that digital competences are the basic basis for the intragroup integration of representatives of socio-professional IT groups.

2.   Empirical data show a specific *correlation between the growth of digital competences and the growth of scientific knowledge values, as a fact of recognizing the important role of science in the development and use of digital technologies.* On this parameter, the integration of IT specialists shows the least divergence. Moreover, in the subgroup of IT managers, the importance of scientific competences and scientific knowledge is evaluated even higher than the value of digital competences. Figure 2.2.2 reveals different attitudes towards scientific knowledge among IT managers and IT specialists.

Coefficient of value potential of IT subgroup locations by scientific values indicator

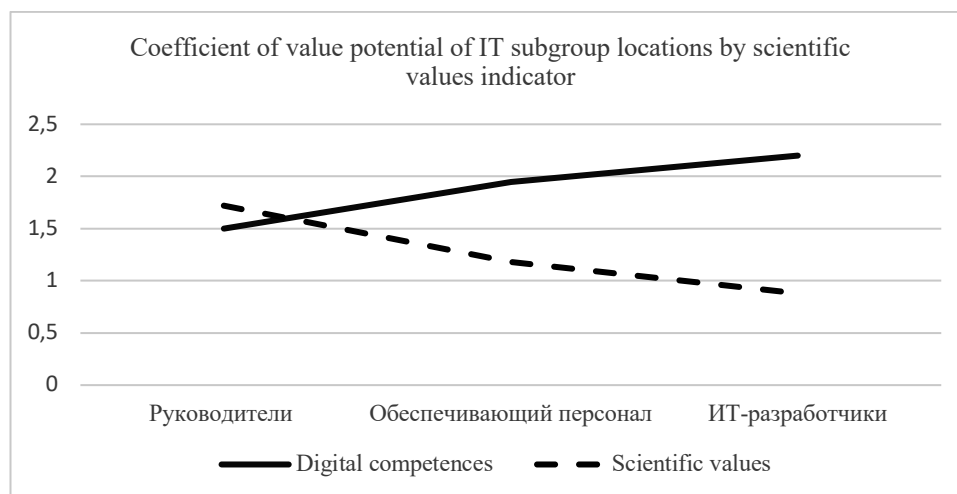Figure No. 2.2.2 Coefficient of value potential of IT subgroup locations by scientific values indicator

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[401] Kasyanenko I., Alabin A. "Aitishniki" as a modern professional group // INTER. 2017. №14.

However, it should be noted that such differences between the values of the respondents of the presented subgroups are minimal; for all other indicator nodes, which will be presented below, such differences turn out to be more significant. The given data allow us to assert that the integration of IT specialists in relation to scientific values acts as one of the core formations that unite IT groups.

3. One of the problematic aspects of IT specialists' intragroup integration is the *differences in understanding and evaluating other people, in general, in understanding another person as a value* (See Figure 2.2.3). The highest coefficient of the value potential of this node-indicator is observed among the support personnel, in the rating of their values the value of other people is in the second place after digital values. Only insignificantly different from the data of this subgroup of IT developers are the indicators of IT managers. As for IT developers directly involved in the development of IT products, the coefficient of the other person value potential is significantly lower. In the present case we are dealing with the most significant, at that, we can say, the most distinctive parameter in the analysis of intragroup integration of IT group specialists. Thus, it can be stated that the value of another person in the traditional sense is less important than the value of digital competences among all subgroups of IT specialists. This fact deserves to be studied and analysed separately; it is wrong to approach this analysis in a simplistic way.
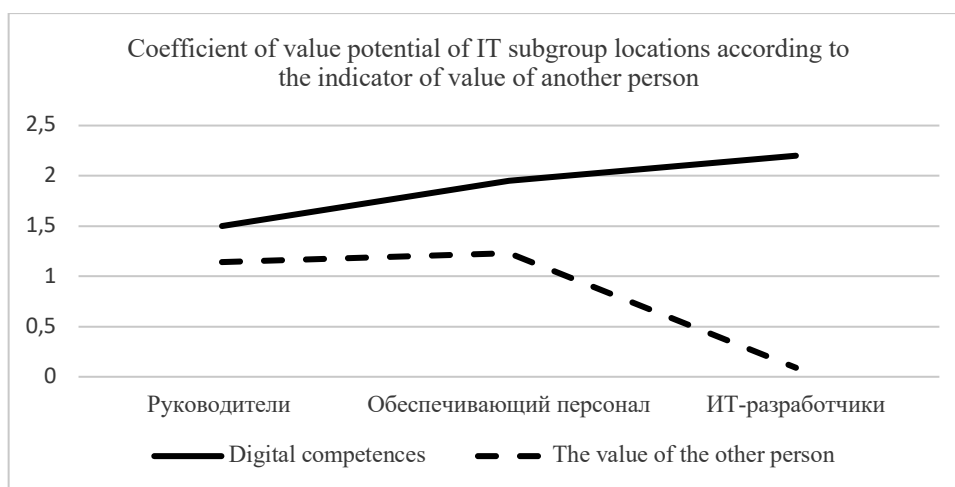
Figure No. 2.2.3 Coefficient of value potential of IT subgroup locations according to the indicator of the value of another person

As noted in the research of I. Kasyanenko and A. Alabin, "It can be assumed that such a high degree of immersion in the digital environment to the detriment of other components of human life, as well as a set of skills that allow to understand and construct this environment, form a very special sense of community, which should be sought in the virtual space, beyond which it rarely spreads [402]. This applies to the specific communications of IT professionals, who spend more than an hour a day communicating online via text messengers and video calls, and they are probably not the same as they appear to us in person. There they feel freer and more confident, everything around them is clear and familiar to them, they are the masters of the situation. In this regard, their reluctance to interact with the real world, which cannot be "calculated", "restarted" or "deleted", becomes humanly understandable, and is the strongest reason for the emergence of not even professional, but a certain "virtual" identity[403].

4. Values of the sensual order play an important applied role in the activities of IT groups. These are the values that orient the activities of IT specialists to meet the needs and interests of IT product users. As can be seen from Figure 2.2.4, these values were the most significant for IT group managers. For managers, these are the most important and the most relevant values in their entire value system. They decrease in the value system of support personnel and have minimal value in the value system of IT specialists (developers).

It should be said that the decrease in the significance of sensual values is great and is second only to the rate of decrease in values related to understanding other people. In other words, sensual values are quite contradictory in the system of intragroup values of IT specialists.

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[402] Kasyanenko I., Alabin A. "Aitishniki" as a modern professional group // INTER. 2017. №14. C. 103

[403] Kasyanenko I., Alabin A. "Aitishniki" as a modern professional group // INTER. 2017. №14. C. 103
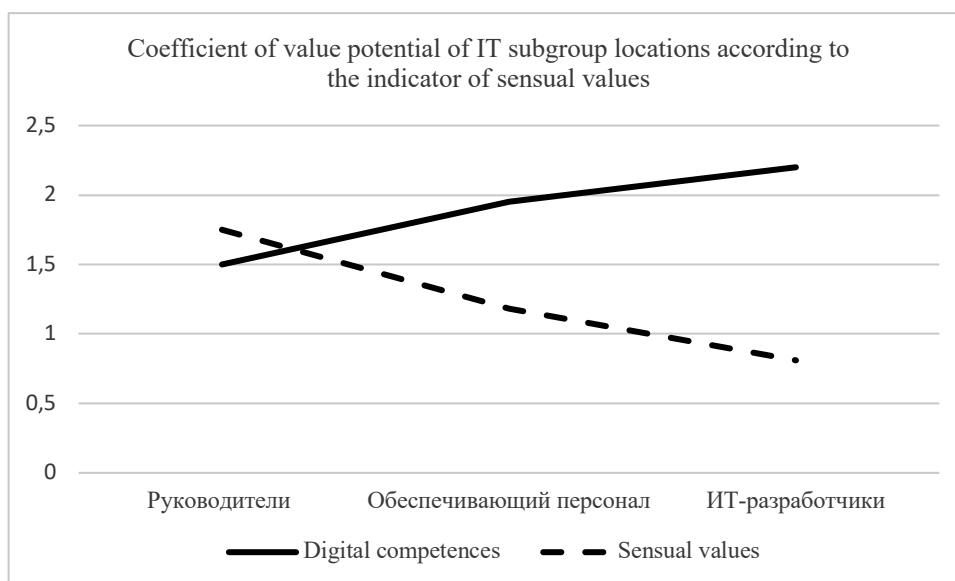
Figure No. 2.2.4 Coefficient of value potential of IT subgroup locations according to the indicator of sensual values.

5. Ideational values, i.e. values related to the focus on self-development and self-transformation, distinguish the subgroup of IT managers as people for whom they are very significant, not inferior to the value of digital competences (See Figure No. 2.2.5). To a large extent, this situation shows the importance of constant self-improvement especially for those who work as IT staff managers: "an IT manager must be ready to learn constantly - and not just to improve his qualifications: his knowledge quickly becomes outdated, he has to learn new programs and technologies in order to maintain a consistently high level of professional value against the background of a general increase in efficiency"[404] .

In the analysis of this group of values, another aspect is also important, which is that the improvement of management based on the integration of personal and group knowledge in decision-making processes is an extremely significant reserve of socio-economic development, using people's personal resources.

[404] Kasyanenko I., Alabin A. "Aitishniki" as a modern professional group // INTER. 2017. №14.
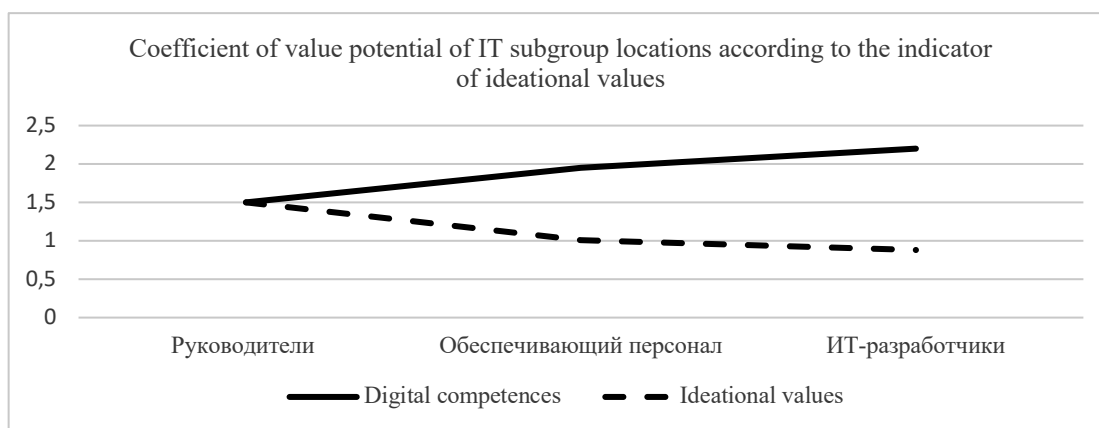
Figure No. 2.2.5 Coefficient of value potential of IT subgroup locations according to the indicator of ideal values

In conditions of uncertainty, as a result of local interactions of people, each of whom has his or her own system of personal knowledge, group knowledge is developed to regulate relations between them at various levels - family, production group, enterprise, municipality, region and country as a whole. This knowledge (economic, legal, axiological), being publicly available, is nevertheless used purely individually by members of the community, considering the peculiarities of "local conditions" and the specificity of their personal knowledge. Decisions are thus made where everything is known about current changes and resources available "at hand» and are made by those who have taken responsibility for the consequences of their decisions.[405]

The role and importance of these values decreases in the system of values of support personnel and further - it becomes minimal in IT developers. Here they acquire the same values as scientific values in terms of the value potential coefficient, slightly exceeding the importance of sensual values.

As the results of the empirical part of the research have shown, the social integration of IT specialists is formed based on professional differentiation and by its nature is predominantly an organic integration, acting as the basis of the new, digital economy, where individualism plays a new, even different role (Hayek F.A.)[406] . Above

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[405] Vittikh V.A. Management improvement on the basis of personal and group knowledge integration // Vestnik of Samara State Technical University. Series: Technical sciences. 2008. №2 (22). C.20.

[406] Hayek F.A. Individualism and Economic Order. - Moscow: Izograf, 2001.

all, this applies to IT organizations. Even within the same organizational structures, the activity of IT professionals is an example of rationally deindividuated intragroup relations, especially such deindividuation is characteristic of IT professionals representing different IT companies.

What are the grounds for this conclusion?

- In order to form an integrated internal environment of socio-professional groups of IT specialists, unified physical territories and a rigid time plan for organising activities are practically not important; what is important is immersion in the IT environment. Here everyone can perform a significant part of functions alone, independently;

- in the activities of IT specialists, the stratification hierarchy depending on professional employment functions is much less pronounced, which provides additional potential for organic integration of IT specialists;

- interdependence, complementarity of functions, and a clear understanding of the importance of the different activities of the participants in a common endeavor are important and relevant in the activities of IT specialists. This applies not only to leading IT specialists, e.g. programmers, but also to other members of IT groups. This fact strengthens the integration foundations of the IT group;

- integration and regulation of interaction and relationships within a socio-professional group of IT specialists is formed on the basis of unity of values. Therefore, in the conditions of such complex organizations as IT groups, employees are not so much focused on the functions of another specialist, his specific occupation and type of occupation, as on the assessment of the quality and nature of interactions and interdependencies in values of different order;

- emotional and personalized ties are much less pronounced in the relationships between IT employees. Professional functions in the IT space are performed without regard to, or at least as significantly less important than, for example, ethnic or kinship

relations, political affiliations or ethical norms. We can say that these are deindividualized actions oriented towards social functions and professional skills, relationships whose integration is mainly based on digital competences;

- integration and dependence of everyone on everyone in IT organizations is more abstracted, on the basis of which the integration of such groups is integration/disintegration of individuals performing or not performing their function. In this sense, personal interaction ensures the freedom and independence of IT professionals from each other in the system of IT space, which is more pronounced than say in other types of collaborative activities.

The analysis of intragroup integration of the socio-professional group of IT specialists allows us to conclude that such integration is organic, where similar or common digital competences and values play a decisive role in its formation. IT employees are rightly regarded as a special kind of network society formed on a professional basis and identical values. Two interrelated processes form the actual basis for the intragroup integration of IT specialists: firstly, the inevitable further differentiation, detailing and interconnection of professional functions[407] , which constitutes the organizational and technological component of integration, and, secondly, the intensive process of mastering new knowledge, which is the basis for the formation of common values.

The IT environment, its intellectual, digital and organizational-technological potential integrates the values of employees of these organizations regardless of their status position, spatial and temporal differentiation. We can say that socio-professional groups of IT specialists, their organic integration-solidarity can be assessed as a special form of social capital[408] . In Table no. 2. 7 presents the results of correlation analysis of connections between subgroups of the IT group by the main subsystems of values.

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[407] "For example, the function of system administration is broken down into sub-functions: administration of data storage systems, mail service, telephony, etc. See Startseva N. N. Differentiation of the community of IT-specialists: sociological aspect // Humanities, socio-economic and social sciences. 2019. №11. C. 114.

[408] Romashkina G. F. Formation of organic solidarity in the youth environment // Education and Science. 2014. №9 (118). C. 71.

Table No. 2. 2. 7 Correlation analysis of integrative relations of subgroups of socio-professional IT group by subgroups of values

	Sensual values			Idiational values			Scientific values			The human being as a value			Digital Values		
	Managers	IT specialists	provisioning	Managers	IT specialists	provisioning	Managers	IT specialists	provisioning	Managers	IT specialists	provisioning	Managers	IT specialists	provisioning
Managers	-	0,60	0,54	-	0,57	0,53	-	0,70	0,73	-	0,46	0,55	-	0,62	0,63
IT specialists	0,60	-	0,59	0,57	-	0,59	0,70	-	0,77	0,46	-	0,53	0,62	-	0,76
provisioning	0,54	0,59	-	0,53	0,59	-	0,73	0,77	-	0,55	0,53	-	0,63	0,76	-
Total	0,58			0,56			0,73			0,51			0,67		

The analysis of the table shows that the intragroup integration of IT specialists can be defined as significant and high. In particular, the correlation coefficient for all groups of values in all cases is determined within the range from 0.51 - in the subgroup of recognition of another person as a value, to 0.73 - in the subgroup of scientific values. In addition to the high level of integration of scientific values, the socio-professional group of IT specialists is characterized by a cohesive perception of the importance of professional digital, technical and technological values. Attention is drawn to the harmonious perception of sensual and ideal values, which is an important characteristic for the whole situation.

The central social feature of the formation of an integrated system of values is the active and conscious position of IT employees in mastering new knowledge. According to the results of the empirical study, mastering new knowledge is the highest correlation between subgroups of IT specialists, even higher than the intergroup correlation for the parameter digital technologies (Kk=0.73 and Kk=0.67, respectively). Due to this circumstance, the socio-professional group of IT specialists can be regarded as one of the most dynamically developing communities in modern Russia, the value unity of which is ensured by the global process of digital space development and the decisive role of knowledge in the formation of this socio-professional group. Among other things, this implies the transformation of IT

organization management, which increasingly involves management by values and based on the integration of personal and group knowledge[409] .

Thus, we can conclude that the values of IT managers are more integrated and sufficiently connected, and their orientation towards the external environment and scientific values influence the formation of the general orientation of the entire network of IT specialists' values. On the other hand, the subgroup of IT developers has more differentiated values, with a high index of digital and technical values, and a minimum of values in the value "attitude towards another person". However, even IT support staff who are not producers of digital products are involved in digital and technical values, although purely human qualities are also important to them.

The Russian IT industry is characterized by a high level of professional competence among IT specialists, which can help to strengthen ties and reduce the risks of conflicts within the team. However, in addition to professional skills, other value differences within the team should also be taken into account in order to achieve more effective intra-team integration. Important aspects here are frequent and open communication, joint development of strategy and work plan, and the provision of training and professional development opportunities for employees. Ultimately, these measures will help to improve team performance as a whole and achieve better IT results.

2.3 Features of Social Integration of IT Specialists with Other Professional Groups in Russian Society

The study of the problem of interaction between IT professionals and representatives of other professional groups in the digital space is one of the most significant topics nowadays. Successful collaboration between the two is essential to

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[409] Vittikh V.A. Management improvement on the basis of personal and group knowledge integration // Vestnik of Samara State Technical University. Series: Technical sciences. 2008. №2 (22). URL: https://cyberleninka.ru/article/n/sovershenstvovanie-upravleniya-na-osnove-integratsii-personalnyh-i-gruppovyh-znaniy (date of address: 03.08.2022).

the effectiveness of most organisations in all major social institutions.[410] However, the interaction between IT professionals and other professional groups can be unpredictable and ambiguous due to differences in professional values and orientations.

Modern digital society creates a new value paradigm, where the peculiarities of interaction between IT specialists and other professional groups reflect the dynamics of social structure development. IT professionals, being a social force shaping the values of the digital society, play an important role in the cohesion and development prospects of Russian society.[411]

In practical terms, this study reflects several peculiarities indicating that the relations of IT specialists with actors of other socio-professional groups are formed ambiguously. The Russian mass media actively and often with negative connotations discuss migration of IT specialists[412], their withdrawal from the Russian IT market (with the beginning of a special military operation)[413], the high level of IT specialists' incomes[414], staff shortage of IT employees on the labor market[415], quality of education of IT students[416] and their competences[417], personal characteristics and peculiarities of

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[410] Derugin P.P., Bannova O.S., Kamyshina E.A., Yarmak V.E., Salfetnik K.E. Sociodynamics of students' digital capital in the epidemiological crisis COVID-19: experience of mixed strategy empirical study // Discourse. - 2021. - № 4. - C. 45-57

[411] Deryugin P.P., Bannova O.S., Kamyshina E.A., Popov R.E., Sidorova A.N. Social and professional awareness of engineering students of the coming digitalisation (Pilot study experience and first results) // Discourse. - 2021. - № 1. - C. 43-56

[412] Migration strategies of young IT specialists / Bannova O.S., Deryugin P.P. // In: Methodological approaches and methodological resources for measuring human capital in digital society: experience and problems. City sociological seminar in the framework of Kovalev readings, 2021. C. 7-9.

[413] Statistics on the outflow of IT specialists from Russia in 2023 (updated). https://inclient.ru/outflow-it-specialists/

[414] The 20 richest IT workers in Russia have been named. https://www.cnews.ru/news/top/2022-08-10_bogatejshimi_it-shnikami_v

[415] Russia needs IT specialists more than ever Gazeta.Ruhttps://www.gazeta.ru/comments/2022/04/12_a_14727050.shtml

[416] Yarmak, O. V. Social portrait of a modern student / O. V. Yarmak, P. P. Deryugin, V. E. Yarmak // Discourse. - 2019. - T. 5, № 4. - C. 53-64.

[417] We need more, but better: how many and what kind of IT specialists are actually in short supply in Russia. https://www.fontanka.ru/2022/08/11/71561588/

interaction with colleagues and consumers of IT products[418] , influence of their activities on the development of Russian regions[419] and a number of others.

Contemporary sociological research argues that digital society differs from industrial and post-industrial society not only in technological development, but also in important social aspects such as the degree of trust[420] . In the digital space, the social ties of IT professionals are dynamically evolving[421] , changing the configuration of social trust, which is an interesting topic for the study of IT professionals' interaction with others[422] .

The methodological basis for the study of IT professionals' relations with other social groups was a multi-paradigm approach formed on two groups of sources[423] .

1. Sources where the dynamics and peculiarities of the development of relations in society and its social structure are considered[424] . These sources show that people's values are the basis of relations in professional activity[425] (professional values) and are formed on the basis of personal values[426] . Digitalization brings new values,

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[418] A simple I.T. guy. Zen. https://dzen.ru/prostoiaitishnik

[419] Factor analysis of investment attractiveness and human capital of regions with world-class scientific and educational centres / E. V. Strashko, O. V. Yarmak, P. P. Deryugin [et al.] // Russian Journal of Management. - 2021. - Т. 9, № 1. - С. 171-175.

[420] Veselov Y.V. Trust in the digital society // Vestnik of St. Petersburg University. Sociology. 2020. Vol.13. Vyp.2. C.129.

[421] The New History of the Post-Covidian World: Markets without Entrepreneurs and Producers? (Based on the empirical study of students) / Deryugin, P. P., Salfetnik, K. A., Yarmak, O., Bannova, O // In Collection: Potemkin Readings. Collection of materials of the V International Scientific Conference, Sevastopol, 2021. C. 12-13.

[422] Rasskazov, S. V. Corporate governance : Textbook / S. V. Rasskazov, A. N. Rasskazova, P. P. Deryugin. - Moscow : Limited Liability Company "Scientific and Publishing Centre INFRA-M", 2020. - 338 c.

[423] Methodological bases for measuring the values of it specialists / Deryugin P. P., Bannova O. S. S., //X International Scientific Conference "Sociology of Religion in Late Modern Society: Religion and Values", Belgorod, 2022. C. 35-39.

[424] Lapin N.I. Sociocultural factors of Russian stagnation and modernization // Sociological Studies. 2011. № 9. C. 3-18.

[425] Kozina I. M., Vinogradova E. V. Young engineers: labor values and professional identity // Monitoring. V. Young engineers: labour values and professional identity // Monitoring. 2016. №1 (131). C. 229.

[426] Kokh I. A., Orlov V. A. Values and professional self-determination of student youth // Education and Science. 2020. №2. C. 144.

which often condition the conditions of existence of society as a whole[427] . In this study we rely on the conceptual provisions of P.A. Sorokin on the sociodynamics of social development[428] and integrative processes in society[429] . The principles of interdisciplinary approach in the study of group and individual values, which were developed by D.A. Leontiev[430] . The specifics of the study of values of Russians[431] , the specifics of empirical studies of values[432] and the formation of IT groups[433] are also considered.

2. Sources that reveal the importance of addressing the study of the power of weak ties[434] . These sources show that network methods are technologies whose potential is aimed at investigating immaterial network structures as relevant and important bases for the formation of value relationships between people[435] .

The tenets of the theory of the strength of weak ties characterize the following factors that underpin the research technology: the tenets of the theory of the strength

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[427] New Values and Consumption Patterns in Digital Transformation. https://club.cnews.ru/blogs/entry/novye_tsennosti_i_modeli_potrebleniya_pri_tsifrovoj_transformat sii (accessed 19.03.23.)

[428] Sorokin P.A. My philosophy is integralism // Sotsis. 1992. № 10 (б).

[429] Lukyanov V.G. Methodology of scientific cognition and the theory of value P.A. Sorokin // Bulletin of Moscow University. Series 18. Sociology and Political Science. 2012. №1. C. 194.

[430] Leontiev D.A. Value as an interdisciplinary concept: the experience of multidimensional reconstruction // Voprosy philosophii. 1996. № 4. C. 15-26. Leontiev D.A. Value representations in individual and group consciousness: types, determinants, changes in time // Psychological Review. 1998. № 1. C. 13-25.

[431] Magun V. S. Magun. S. Basic values-2008: similarities and differences between Russians and other Europeans: Preprint WP6/2010/03 [Text] / V. S. Magun, M. G. Rudnev; State University - Higher School of Economics. M. 2010. 52 c.

[432] Aminov S. R. Empirical sociological approach to the analysis of values // System of values of modern society. 2009. №7. C.119.

[433] Prikhozhiy A.A., Zhdanovsky A.M. Method of qualification assessment and optimization of the composition of professional groups of programmers // System Analysis and Applied Informatics. 2018. №2.

[434] Granovetter M. The power of weak ties // Economic Sociology. 2009. №4.

[435] Rasskazov, S. V. Corporate governance : Textbook / S. V. Rasskazov, A. N. Rasskazova, P. P. Deryugin. - Moscow : Limited Liability Company "Scientific and Publishing Centre INFRA-M", 2020. - 338 c.

of weak ties characterize the following tenets on the basis of which the research technology is constructed[436] :

- non-linearity of the dynamics of changing network structures[437] , which most significantly affects the relations of IT professionals with other social groups[438] ;

- information in the system of weak ties of IT specialists with representatives of other social groups spreads faster and wider[439] than in stable and strong ties within the socio-professional group of IT specialists.

- weak ties allow for more opportunities for interaction and new relationships to emerge[440] IT professionals with other professional groups;

- weak ties serve as a space for the rapid diffusion of innovations between IT professionals and other social groups[441] : strong ties localize routine and bureaucratic relationships;

- The pragmatic utility of weak ties as a source of new information and relationships for IT professionals;

- Strong ties within IT groups have information redundancy and buy new relationships compared to weak ties[442] ;

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[436] Kurkina E.S., Knyazeva E.N. Methodology of network analysis of social structures // Philosophy of Science and Technology. 2017. №2.

[437] Cronover R. M. Fractals and chaos in dynamical systems. Fundamentals of the theory. M. Postmarket, 2000. 352 c.

[438] Deryugin P.P., Miletsky V.P., Bannova O.S., Kamyshina E.A. Social capital in the era of crises: systemic bases of network measurements //Social capital in the era of crises: systemic bases of network measurements. 2022. C. 88-92.

[439] Seifullaev R.B. Speed of information dissemination and perception // Bulletin of Master's degree. 2016. №6-2 (57). C. 35-36

[440] Voronkin A. C. Social networks: evolution, structure, analysis // OTO. 2014. №1. C. 651-652.

[441] Puzanov K. A. Modern models of innovation diffusion: a critical analysis // Sociology of Power. 2012. №6-7. C. 88.

[442] Shaev Y. M. Information redundancy and digital detox in the context of communication ontology // Humanitarian Vector. 2018. №2. C. 26.

- formation of strong ties can lead to localization of the social group of IT professionals and loss of connection with society, which limits, among other things, professional opportunities in the system of strong ties of IT professionals[443] .

The empirical study was conducted in late 2022 and early 2023. The sample included: computer science students (212 people), IT support staff (112 people), IT programmers-developers (94 people) and IT managers (38 people). The methodology used J. Holland's online questionnaire and expert interview with representatives of each group of respondents.

The basic procedure of J. Holland's questionnaire[444] consists in pairwise comparison of professions assigned to one of six groups: traditionalist, conventional, realist, research, social, artistic and entrepreneurial. The methodology of J. Holland allows to obtain quantitative characteristics of the election of important and significant professions against the background of unimportant or insignificant[445] .

The characteristics of professional values of the studied professions in the methodology of J. Holland allows us to classify them into two groups - ideational and sensual (P. Sorokin). Ideational values are aimed at self-improvement and development of internal structures of personality activity, rather as transformation of oneself, one's inner world. Sensual values are aimed at active social interaction and the desire to transform the external environment as a result of such interaction.

The identification of significant occupations and their quantitative characteristics were obtained through a methodological procedure that took 10 to 15 minutes. The following indicators were used to analyze the data: value weight - arithmetic mean value obtained from the online survey, connectivity - correlation

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[443] Savchenko D.V. Social groups in the structure of society: theoretical concepts and management models // Society and Law. 2014. №3 (49). C. 295.

[444] J. Holland test (modified by G.V. Rezapkina) http://восколледж.рф/files/0001/Методика%20Голланда.pdf

[445] Sociodynamics of digital competences of sociology and programming students: a comparative analysis of empirical research results / Deryugin P. P., Bannova O. S., //In the book: Sociologist: education and professional trajectories. S., //In the book: Sociologist: education and professional trajectories. materials of the All-Russian scientific conference XV Kovalev Readings. St. Petersburg, 2021. C. 254-255.

coefficient obtained by comparing the respondents' indicators, and value potential of the network - the product of the weight of a node by the value of its connectivity with other nodes.

One of the main characteristics of ideational professions is the aspiration to self-improvement and development of internal structures of personality activity. Unlike sensual types, which pay more attention to transformations in the external environment, ideational types are oriented towards changing themselves and their inner world. They have minimal social skills and interpersonal relationships play a minor role. Instead, emotionality and self-affirmation are important to idealizing professionals. Despite this, changing the external environment is still relevant to them, but predominantly through intellectual, emotional-feeling, volitional, perseverance or business self-expression. Such characteristics were identified in Appendix 6, formed on the basis of analyzing J. Holland's methodology[446] .

According to J. Holland's concept, representatives of certain professions express themselves through active social interaction and aspiration to change the external environment through such interaction. On the other hand, according to J. Holland, some professionals "accept" the requirements of the social environment ("traditionalists"), they "possess social skills and need contacts" ("social professions"), it is important for them to communicate with representatives of different professions in different situations, their work requires the ability to understand the motives of other people's behavior, they possess the skill of effective communication ("entrepreneurs"). These are professions oriented towards social activity, capable of analyzing social conditions, influencing and changing them with varying degrees of activity and efficiency. For example, "traditionalists" tend to be conservative, dependent and do not like to change their activities. However, they constantly and consistently act in accordance with algorithms and rules. Representatives of social professions, on the other hand, are always developing connections, communications and contacts. Entrepreneurs, on the

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[446] Take the test: Holland Model Test. https://psytests.org/typo/riasecA-run.html

other hand, are dominant, persistent and aim to change and transform the social landscape.[447]

As for the interviews, they were conducted with IT specialists and were considered as a method complementing the obtained statistical data.[448] The analysis of Table No. 2.3.2 and Figure No. 2.3.1. reveals an important feature of IT specialists' relations with other professional groups. Network analysis shows the problematic nature of these relations, where predominantly negative ties with representatives of other professional groups are recorded.

Table No. 2.3.2 Weighting characteristics, connectivity and value potential of network nodes

	IT students	IT support	IT programmers	IT managers	Weight (cf.)	Liaison (cf.)	CPS (general)
Artistry	7,80	8,20	7,19	7,20	7,91	-0,07	-0,55
Realism	6,52	5,13	6,06	6,27	6,17	-0,13	-0,95
Researcher	7,20	7,73	6,69	7,67	7,20	-0,21	-1,51
Ideational	**6,54**	**6,04**	**6,08**	**6,29**	**7,09**	**-0,14**	**-0,99**
Entrepreneurship	7,19	7,13	7,44	9,00	7,37	-0,16	-1,18
Sociality	7,40	8,53	8,38	6,97	7,74	-0,34	-2,63
Traditionalism	5,90	5,27	5,50	4,93	5,46	-0,58	-3,17
Sensual	**7,46**	**7,96**	**7,67**	**7,72**	**6,89**	**-0,33**	**-2,27**

It follows from the generalized finding that IT professionals are more critical of the representatives of sensual professions than of the professionals of the ideational order. Ideational professions are rated with a weight of 7.09 and the coefficient of

[447] Deryugin P.P., Miletsky V.P., Yarmak O.V., Bannova O.S., Kurazhev S.D. Social relations of it-specialists with other professional groups: network modelling and results of empirical analysis Discourse. 2023. Т. 9. № 3. С. 113-133.

[448] Deryugin P.P., Bannova O.S., Maranchak A.G. Socio-professional group of IT-specialists: conceptualisation of theoretical and methodological bases of research. Discourse. 2023;9(2):78-92.

relatedness of these values is -0.14. Overall, the CPS of ideational values is -0.99, indicating more tolerant attitudes toward members of ideational professions than toward sensual professionals (CPS -2.27, vs. CPS of ideational -0.99). Attitudes towards sensual professions are worse among IT professionals than towards professionals of the ideational sphere (CPS modulus difference of 1.28 points).
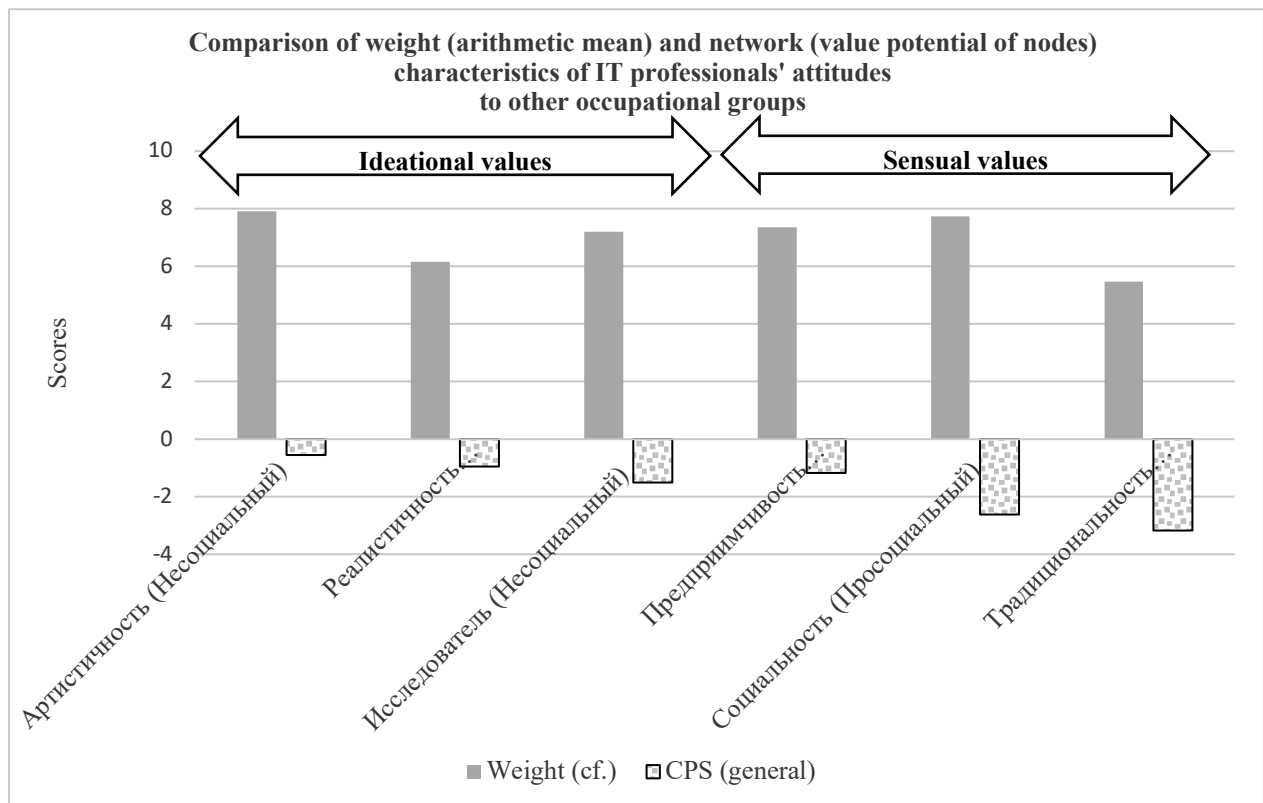
Figure 2.3.1 Comparison of weight (arithmetic mean - Weight) and network (value potential of network nodes - VNN) characteristics of IT specialists' attitudes towards other professional groups

Attitudes of IT professionals towards professions based on traditionalist or conventional values. In general, IT professionals and professionals whose values can be defined as traditionalist have different value traits.

Conventional professions conform to agreements and are harmonized in terms of objectives and methods of activity, oriented towards structured, hierarchical and well-defined activities with clear and precise rules. For these types of professionals, activities with an uncertain and unstructured character are unacceptable. The outcomes of work in these professions are usually pragmatic in nature and are stereotyped and

practical. These occupations, which rely on mathematical and information abilities, include accountants, financiers, economists, clerical clerks, librarians, controllers, chemical technologists, draftsmen, proofreaders, logisticians and merchandisers. They work in transport, communications, economics, office management, statistics and other fields.

Although the professions may seem similar to IT professions, they are intrinsically different in terms of technologies and work goals, as well as in terms of the organization of activities. The overall CPS on IT professionals' evaluations of such professions is maximally negative, being -3.17 points. The weight of these values is minimum 5.46 points and at the same time maximum negative connections of this group of values with groups of other values -0.58. IT managers least value the values of traditional type specialists, the weight of such values IT managers estimate at 4.93 points. This is the minimum value of the values weight indicators according to the results of the whole research. In the same way - most critically - IT- (weight 5.90) and IT-programmers (weight 5.50) assess the values of professions of traditional order. IT specialists are most critical of the characteristics of professions, such as standardization and repetitiveness of activity strategies, conservatism and uniformity of operations. They have tensions and understanding of the importance of such qualities of these professionals as "dependence and subordination", "conservative character", "obligatory fulfilment of customs and traditions in work", "excessive performance", but especially "tensions with unambiguous acceptance of the position of management", "standards of social activity, obligatory". Figure 2.3.2 shows negative links as dotted lines, positive links as solid lines.

The attitude of IT specialists to *social* sphere professions turned out to be very high - 7.74 points. Such professions are recognized by IT specialists as important and significant. IT support personnel have a particularly positive opinion of these professions (weight 8.53 - the highest score of all other professions for IT support personnel whose activities depend on communication abilities to a large extent). The same is true for IT programmers, the professions of social order they note as one of the

most important among all other professions, the weight of these professions in the present case is 8.38 points.
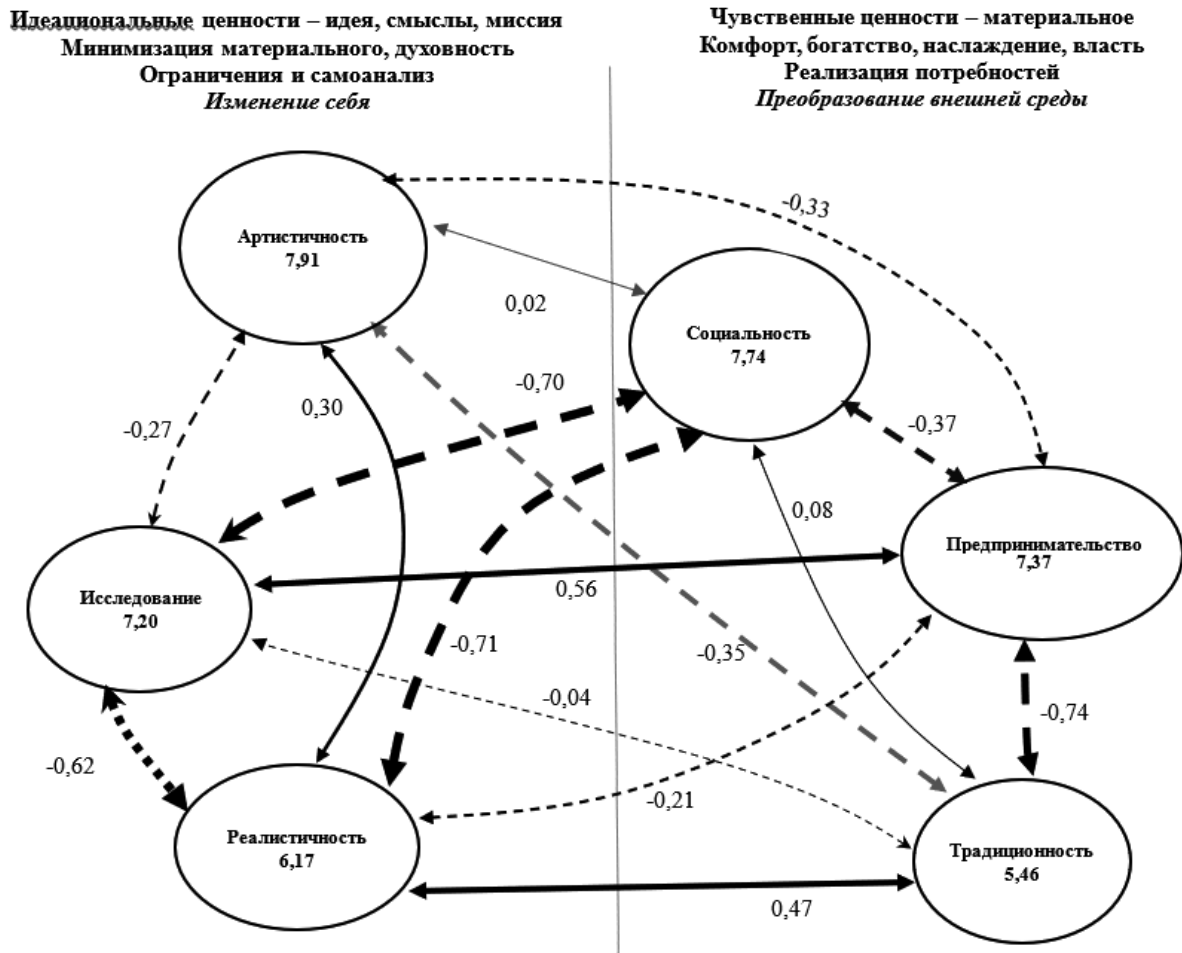
Fig. 2.3.2 Networks of connections of IT specialists' values with actors of different professional groups

However, Figure 2.3.2 shows that the values of these professions do not fit into the general system of professional values of IT specialists. The correlation of social professions values with the values of other professions is negative, negative 0.34, and the overall CPS of social professions here is low, it is equal to -2.63 points. According to IT specialists, the relatedness of social values with the values of research activities and professions that are formed on the basis of realistic values is deeply negative, amounting to - 0.7 or more (see Figure No. 2.3.2). Significant negative values of the relationship are characteristic of social values and values of entrepreneurial activity, -

0.37. Despite the importance of these professions and the recognition of their role from the point of view of IT specialists, at the value level, social plan professions are ambiguously understood. For example, DJs, merchants, volunteers and others are vivid representatives of such professions, for which emotions and feelings can play a decisive role, and the activity is not always connected with solving intellectual problems. According to J. Holland's methodology, this also includes teachers, doctors, psychologists, journalists, in short, those who realise their professional interests on the basis of verbal abilities and analysis of other people's psychology. As IT students later said, they are repulsed by the desire of such professionals to "teach" and "educate", by the "detachment from the intellectual intensity" of their labour activity. IT specialists recognise the importance of these professions, but internal value unity with professionals of social professions should not be expected here[449]. The lowest authority of such professions turned out to be for IT managers (weight 6.97).

The study found that professions requiring developed research abilities are the most detached and isolated. Interestingly, IT specialists, despite their association with search and research activities, rate research professions extremely negatively - by only 6.69 points. IT support specialists rate the value of research activities higher than programmers, with a score of 7.73. The experts put forward the hypothesis that programmers' "romantic" attitude to their profession comes after 2-4 years of work, when professionals begin to understand the consequences of "sedentary lifestyle", "global involvement in the topic", "night vigil", etc. In the process of the study, it was found that research based professions have conflicting relationships with social type professions (correlation -0.70), realist value based professions (-0.62), artistic type professions (-0.27) and traditional type professions (-0.04). However, a positive relationship between the values of research professions was found only with the values of entrepreneurial professions (0.56), which, like research professions, require full

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[449] Human capital in the value orientations of students: methodology, methodology and diagnostic results / Deryugin P.P., Yarmak O., Strashko E.. V., Strashko E. V., Kamyshina E. A., Bannova O. S // Social and Humanities: Theory and Practice, no. 1 (5), 2021, C. 215-227.

commitment and a high degree of involvement in activities. In general, research professions are characterized by analyticity, developed abstract thinking and rationality, as well as a tendency to fantasy and a desire to be original and independent. However, this often leads to low physical activity and a tendency to analyze the inner world.

The values of entrepreneurial activity are the basis of professional activity for those who face many diverse tasks, complex problems, and frequent communications. They include activity, initiative, the ability to quickly analyze the motives behind people's behavior and to communicate effectively with them. Professions such as entrepreneurs, directors, managers, reporters, politicians, diplomats, brokers, possess these qualities and seek social recognition and authority. However, IT professionals do not consider these values important and even have a negative attitude towards entrepreneurial professions (the total CPS of entrepreneurial values is negative -1.18). IT executives have more respectful attitudes towards these professions (the weight of entrepreneurship values for IT executives is the highest 9.00 points) than IT support (weight 7.13) and students (weight 7.19), but the relationship generally remains strained due to avoidance of intellectual work, inattentiveness in work, aggressiveness and bossiness, and increased focus on economics and politics. The correlation between the values of the professions based on entrepreneurship, traditional values (-0.74 is the maximum negative correlation of the network nodes), realism (-0.21), sociality (-0.37) and artistry (-0.33) is negative. IT is discouraged by the impulsiveness, aggressiveness and turbulent political activities of entrepreneurs, as well as their tendency to organize loud parties and endless conferences.

Professions that are based on *realist* principles include activities that, according to J. Holland, have a non-social character and tend to be present-oriented and static. Experts in these professions require emotional stability, clarity and predictability of interaction objects' behavior, motor skills and concreteness. The overall CPS for these professions is negative and equal to -0.95, with IT students showing the most interest in these professions, while IT support personnel show the least interest. The correlation

between realistic values in the network is negative and is -0.13. Values related to realism are not compatible with the values of research-based professions (correlation -0.62), sociality (correlation -0.71) and entrepreneurship (correlation -0.21). However, they are correlated with the values of professions based on traditional values (correlation positive, 0.47) and artistry (correlation 0.30). The difficulties in the interaction of IT professionals with the actors of professions based on the values of realism are due to their tendency towards motor activity, physical strength, aggressiveness and practicality, as well as their avoidance of abstractions and theorizing in favor of pragmatism and concreteness. Values related to realism often drive career choices in favor of occupations such as mechanical engineer, military, agricultural worker, zootechnician, welder, dentist or police officer. At the same time, IT specialists, as well as professionals in the above-mentioned professions, have developed mathematical and non-verbal abilities, rationality, spatial imagination, technical orientation and the ability to process and communicate information.

Artistic professions have high weight parameters of values (7.91), which makes them important for IT specialists (weight 8.20), but the values of IT developers and IT managers are estimated approximately equally (respectively, weight 7.19 and 7.20). Despite the importance of artistic values, the CPS of this node is negative (-0.55), which can be explained by the high life ideal and assertion of one's self characteristic of representatives of this type of professional values. For IT specialists, the attractive features of artistic values are developed flexibility and originality of thinking, developed imagination and intuition, independence and originality of proposed solutions, as well as a high level of self-expression, creative occupations, avoidance of physically demanding activities, regulated working hours and adherence to rules and traditions. The difference between IT professionals and artistic-type professionals is the decisive role of emotions and feelings in professional choice. Professions based on artistic values include actors, artists, photographers, designers, musicians and others. Despite the emotional and psychological unity between IT professionals and artistic professionals, their activity relations are different.

It can be concluded from the study that IT professionals' attitudes towards members of other professions can be complex and diverse. In particular, attitudes towards professions formed on traditional values may be rather negative, while professions associated with sensual values may be attractive, but relationships with them may be unstructured. Developing communication mechanisms between IT professionals and other professions through internal platforms, forums or extra-corporate events can help to foster more structured and open relationships.

In addition, the study shows that IT professionals' relationships with other professionals are mostly situational and dependent on specific circumstances and factors rather than on shared professional values and interests. These findings may be useful for understanding the interaction of IT professionals with other professional groups and for developing effective communication and collaboration strategies between different professional groups in an organization.

IT professionals highly value professions of the ideational order, particularly research professions. They believe that the values associated with these professions are the most attractive and useful. However, according to empirical research, these professions are more difficult to integrate into the system of interaction between IT professionals and other professional groups.

In the process of mastering professional values and changing the professional status of IT professionals, their perceptions of other professional groups change. For example, IT students and young IT graduates tend to have less differentiated attitudes towards members of other professions, while established IT professionals and IT managers are more differentiated in their attitudes towards different professions but may not attach enough importance to professionals in sensual professions. IT support staff have the most differentiated attitudes towards other occupational groups and tend to have the most positive attitudes towards the sensual professions, while attitudes towards members of the ideational professions may be less relevant.

It is important to note that in practice, especially in management and production, IT professionals may tend to "withdraw" into their own problems and pay less attention

to the social context and meaning of their work, as well as to analyzing the implications for the external environment. This may manifest itself in their avoidance of customer interests and overall company goals, ignoring the requirements of organizational culture, etc. Therefore, it is worth paying more attention to the social responsibility of IT professionals and raising their awareness of the impact of their work on the external environment.

The methods of network research of IT specialists' attitudes towards representatives of other socio-professional groups are an effective tool for identifying and systematically analyzing relations between professional groups. Using such methods, it is possible not only to assess the aggregate level of relations, but also their degree of differentiation by certain properties, as well as to identify the inclusion of IT specialists' values in the general system of relations.

The results of the study show that the interaction of IT specialists with representatives of other professional groups is different and depends on the specifics of their professional competences. It was also revealed that at different stages of IT specialists' professional career development the nature of perception of representatives of other professions changes, which manifests itself in different degrees of differentiation of attitudes towards them. Therefore, network methods of research of IT specialists' attitudes towards representatives of other professional groups can be used to determine the directions of development of professional qualities and social competence of IT specialists, as well as to manage interprofessional relations in organizations.

The research shows that relations between IT specialists and representatives of other professional groups are complex and multifaceted. According to the research results, the interaction of IT specialists with professionals from other fields is formed based on different values and interests, which distinguishes them from the internal relations in the group of IT specialists. Attitudes towards representatives of other professions are more determined by situational factors such as circumstances, people and specific conditions rather than by the commonality of professional values.

2.4 Typology and Network Features of Sociodynamics Integration of IT Groups in Russia, China, USA, Brazil (Based on Pilot Study Results)

Integration of IT specialists has not only a local intra-country character[450] . Obviously, this is such a socio-professional group, which may well be referred to the global one, and the integration of this group as integration of a global nature. P.A. Sorokin regarded integration as a natural expression of some emerging community-culture, as "an axis around which all basic properties are concentrated, and which makes it possible to understand why these properties are exactly so and why they exist and function exactly so and not otherwise"[451]. At the same time, he understood integration as a unity that can arise firstly as a result of joint spatial arrangement of social elements-actors, secondly, as a result of indirect organizational and functional unity, and thirdly, as a result of logical and semantic integration of subjects, which is a certain set of common ideas, views, principles, a set of "values of which this integration consists, providing a combination and a certain integrity"[452].

He emphasized the special role of logical and semantic integration, specifically pointing out that the intellectual component is important in logical and semantic integration: "logical and semantic unities can be found only in that sphere which includes human thought and imagination, that is, in the sphere of human culture, and only in that part of it which is the result of the activity of the human mind, be it science, religion, art, philosophy, morality or technology. In other words, meaning and logical integration, by definition, can exist only where there is reason and meaning"[453] . P.A. Sorokin considered the level of logical and semantic integration as "the highest form of integration"[454] . Therefore, it is quite characteristic that these are the values that most

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[450] Specifics of human capital of IT specialists in Russia, China, Europe and the USA: the research conception / Deryugin P. P., Bannova O. S. // XIV International Scientific and Practical Conference Russia - China: History and Culture. S. // XIV International Scientificand Practical Conference Russia - China: History and Culture, 11-13 November 2021, Kazan

[451] Sorokin P.A. M. Social and Cultural Dynamics. Astrel, 2006.- 1176 p. C. 34.

[452] Sorokin P.A. M. Social and Cultural Dynamics. Astrel, 2006.- 1176 p. C. 39.

[453] Sorokin P.A. M. Social and Cultural Dynamics. Astrel, 2006.- 1176 p. C. 47.

[454] Sorokin P.A. M. Social and Cultural Dynamics. Astrel, 2006.- 1176 p. C. 40.

adequately express the content of logical-sense unity. He wrote: "the highest values and complexes of values of any great culture belong to the category of logical-sense unities, it is this level that gives it its socio-cultural and logical-sense individuality, its special style, appearance and character"[455]. Thus, addressing the values of IT specialists is essentially a study of those structural and cultural features of a socio-professional group, which emerges as a reflection of the deep values of a new social structure of a new type of society. Here it is also important to outline the main methodological and methodological peculiarities of the implementation of such a research: the method used to investigate the logical and semantic unity is understood as the identification of uniformity (or similarity) of the main meaning, idea or mindset of the researcher, which permeates all logically related elements.[456] It should be summed up that by addressing the research of IT specialists' values, sociology is able to identify and characterize the central properties, traits and parameters of IT specialists as a new global socio-professional group from the point of view of understanding and explaining the highest forms of its integration.

When conducting studies of IT groups and IT communities, researchers invariably emphasize the relevance of considering IT workers as a special network community, the formation of which is conditioned by the logic of the development of the very tools of networking - information technologies (the spread of the global Internet and computer networks, etc.). In their opinion, it can already be stated that IT groups and IT communities are characterized by the following features: the presence of a large number of actors - IT specialists, semi-professionals and ordinary users; network branching, lack of clear boundaries and openness of the IT community; vague criteria for "entering" the network of other actors, which further expands the boundaries of the IT community; network stability in conditions of intensive transformations[457]

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[455] Sorokin P.A. M. Social and Cultural Dynamics. Astrel, 2006.- 1176 p. C. 47-48.

[456] Sorokin P.A. M. Social and Cultural Dynamics. Astrel, 2006.- 1176 p. C. 44.

[457] Startseva N. N. Differentiation of the community of IT-specialists: sociological aspect // Humanities, socio-economic and social sciences. 2019. №11. C. 114

and many others. The problem of network stability under conditions of intensive social transformations is largely related to the integration and identification of IT groups.

Network research methods have special potential for such analyses, including network research of IT specialists' values[458] . As N.N. Startseva notes, the network perspective makes it possible to consider the peculiarities of the social construction of the community of IT specialists, to identify the social locations of groups of information technology specialists, to determine the development trends of the IT community as part of the professional structure as a whole[459] . Based on this conceptual position, the present study attempts to examine the network features and typology of social integration in IT groups in Russia, China, USA, Brazil based on the results of a pilot study[460] .

The aim of the pilot empirical study was to identify, study and characterize the peculiarities of integration of IT specialists' values in the conditions of different social systems and on this basis: a) *scientifically - to* form models of integration unity of IT specialists and draw conclusions about the peculiarities of the types of such integration, as well as value opposites-dichotomies that act as sources and factors of their integration; c) *methodologically* - to form and test the technology of research of integration unity of IT specialists; d) *methodologically - to* form and test the technology of research of IT specialists' values in the conditions of different social systems; e) *scientifically* - to form models of integration unity of IT specialists and draw conclusions about the peculiarities of the types of such integration, as well as value opposites-dichotomies that act as sources and factors of their integration.

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[458] Deryugin P.P. Social diagnostics of interpersonal relations in the history of Western and Russian sociology. St. Petersburg, 2001.

[459] Startseva N. N. Differentiation of the community of IT-specialists: sociological aspect // Humanities, socio-economic and social sciences. 2019. №11. C. 114

[460] Problems and limitations of research methodology of values of IT specialists - respondents from Russia and China / Deryugin P. P., Bannova O. // International Scientific and Practical Conference "V Gotlibov Readings: Oriental Studies and Regional Studies of the Asian-Pacific Region in the context of transdisciplinary regional studies", 2021

Justification of the choice of countries for the analysis. The procedure of studying the socio-group integration of IT specialists based on reference to values within one social system does not give a complete picture of the peculiarities and characteristics of integration on a global scale. Therefore, to study the peculiarities of such integration, the processes of integration of IT specialists were studied not only in Russia, but also in China, the USA, and Brazil. The choice of these societies for the study was justified by the following considerations.

- *China*, considered as a society whose values are formed with significant national specificity, which presumably should be reflected in the processes of integration of Chinese IT groups. In practical terms, China is a partner country, which is important for further active development of the IT industry and organization of interaction between Russian and Chinese IT specialists. In particular, the study of the peculiarities of integration of IT specialists' values will make it possible to develop recommendations for improving partnerships in the creation and use of joint scientific and technological projects, which is of particular importance in the context of growing competition and cyber security: "The problem of digital space protection has become one of the most discussed in the world today. Since the beginning of the century, it has become one of the factors influencing international relations. ICT issues are of extreme relevance for modern Asia, which includes Russia and China"[461];

- The study considers the *USA* as a society that has considerable experience in the work of IT groups and strategies of forming their value integration. The peculiarities of the American society are interesting because IT groups here are formed largely of emigrants - representatives of various countries of the world, which in itself is a certain peculiarity affecting the characteristics of socio-professional integration of IT specialists. It is important to study such experience despite sanctions and political

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[461] Isaev A. C. Russian-Chinese interaction on ensuring information security // China in the world and regional politics. History and Modernity. 2018. № 23. C. 223.

confrontations, as an experience of interaction between IT specialists in the conditions of conflicts[462] ;

- *Brazil, a* country that is indicative for this study, is a society that is similar in many ways to Russian conditions in several basic objective characteristics: "Many people who have been to Brazil remark that it resembles Russia in some ways. And this is indeed true in a way"[463] . As such "similarity" researchers say about the commensurate number of inhabitants of these countries, a significant dispersion of territory, both countries are members of the developing countries (BRICS). Brazil makes its choice of development strategies centered on the doctrines of both China and the US[464] . Having roughly similar socio-economic and natural-geographical conditions can presumably mean that the values of Brazilian IT specialists can be commensurate and similar to the values of Russian IT specialists.

As a working hypothesis, we put forward an assumption that had two parts. Firstly, the assumption that the typology of socio-professional integration of IT specialists is built on the basis of the peculiarities of interaction of values of social and professional order in different social situations in different ways. In the present case, the country approach can presumably make it possible to study the different nature of this interaction and confirm that in some social systems oriented towards collectivism and solidarity, taking into account national peculiarities and traditions, the values of IT specialists will be integrated into the general system of values of the social system with the priority of the social component, in particular, values and orientations towards other people, values of scientific progress, and socio-philosophical values will become significant. In other social situations and systems oriented towards competition, growth of profits, liberal values - in general towards rationalism and pragmatism, the values of

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[462] High-tech sanctions and restrictions against Russia. 2022/07/08 https://www.tadviser.ru/index.php/Статья:Санкции_и_ограничения_в_области_высоких_техно логий_против_России. (Date of circulation 12.08.22)

[463] Brazil vs Russia. Journal of Georgiy Krasnikov. https://griphon.livejournal.com/163634.html (Date of circulation 12.08.22)

[464] Simonova L. N. Brazil today. Election rhetoric and real policy of J. Bolsonaro // Free Thought. 2020. №4 (1682). С. 106.

IT specialists will be formed with the priority of professional orientation of IT specialists, which will lead to an increase in the importance of digital technology values. In such a situation, to a lesser extent, the values of IT professionals will be orientated towards other people, towards the values of scientific progress and socio-philosophical values. The different correlation of social and professional values will make it possible to identify typical situations of socio-professional integration of IT specialists, which can be defined as types of such integration. The second part of the hypothesis was to test the assumption that the integrative approach to the study of IT specialists' values as a single socio-professional group will allow us to identify the most characteristic features of IT specialists' values as professionals in the global world, for whom the most relevant will be the interrelations of values of the professional order, which will be expressed in a set of a variety of dichotomous links. First, such dichotomous links will be relevant between sensual and digital values, scientific, human and other values. The digital values of IT professionals will in any case play a decisive role in the formation of a global space that is similar and unified for the activities of these socio-professional groups. The results of the conducted research will be outlined in the sequence of consideration of the hypothesis parts.

Outcome 1. A country approach in the study of IT professionals' values. Types of socio-professional integration. To test the shown hypothesis, Table No. 2.4.1 and Figure No. 2.4.1 were formed based on the conducted survey, which model the value system of IT specialists under different social situations.

Table No. 2.4.1 Summary table of quantitative weights of indicators, their linkage indicators, and the value potential of the network of IT professionals in the situations studied.

Values	Sensual			Ideational			Scientific			Human			Digital		
	Liaison	Weight	CPS	Liaison	Weight	CPS	Liaison	Weight	CPS	Liaison	Weight	CPS	Liaison	Weight	CPS
Russia	0,34	3,84	1,31	0,29	3,90	1,13	0,34	3,68	1,25	0,32	3,43	1,10	0,54	3,94	2,13
China	0,64	3,21	2,05	0,58	3,78	2,19	0,67	3,49	2,34	0,43	3,20	1,38	0,57	3,44	1,96
U.S.A.	0,10	3,79	0,38	0,23	3,80	0,87	0,23	3,77	0,87	0,16	3,40	0,54	0,26	3,90	1,01
Brazil	0,02	3,79	0,08	0,06	3,96	0,24	0,02	3,40	-0,03	0,26	2,90	0,75	0,34	4,20	1,43

Fig. 2.4.1 Values of socio-professional groups of IT specialists in Russia, China, USA, Brazil

Table No. 2.4.1 Summary table of quantitative weights of indicators, their linkage indicators, and the value potential of the network of IT professionals in the situations studied.

Values	Sensual			Ideational			Scientific			Human			Digital		
	Liaison	Weight	CPS	Liaison	Weight	CPS	Liaison	Weight	CPS	Liaison	Weight	CPS	Liaison	Weight	CPS
Russia	0,34	3,84	1,31	0,29	3,90	1,13	0,34	3,68	1,25	0,32	3,43	1,10	0,54	3,94	2,13
China	0,64	3,21	2,05	0,58	3,78	2,19	0,67	3,49	2,34	0,43	3,20	1,38	0,57	3,44	1,96
U.S.A.	0,10	3,79	0,38	0,23	3,80	0,87	0,23	3,77	0,87	0,16	3,40	0,54	0,26	3,90	1,01
Brazil	0,02	3,79	0,08	0,06	3,96	0,24	0,02	3,40	-0,03	0,26	2,90	0,75	0,34	4,20	1,43

Characterization of value networks.

Country approach. Location of values of the socio-professional group of Russian IT specialists. In general, the integration of values of Russian IT specialists of Russian IT groups can be characterized as moderate (Кцпс=1.42). This follows from the fact that the coefficient that shows the value unity-integration of Russian IT-group specialists is two times higher than the unity of American IT-group specialists and three times lower than that of Chinese IT-group specialists, i.e. it is in some intermediate state (Table No. 2.4.2). The core of the value system is made up of digital and technical-technological values, which account for 30 to 50 per cent of all values of Russian IT group specialists. The core of digital values has a significant connection with values of a scientific nature (Ksv=0.49), i.e. they are orientated rationally and pragmatically. There is a high correlation between digital values and values of socio-philosophical meaning - sensual and ideal values. At the same time, the priority of sensual values is slightly higher than the priority of ideal values (by 0.20 points).

Table No. 2.4.2 Connections of value nodes in the value system of Russian IT specialists

Russia	Sensual	Ideational	Scientific	Human	Digital
Sensual	-				
Ideational	0,30	-			
Scientific	0,33	0,30	-		
Human	0,29	0,23	0,30	-	
Digital	0,40	0,40	0,46	0,43	-

The weakest linkage of the core values - digital values - to what might be called the values of another person.

The connection of the core values with other values is perceived as the most important subsystem of values in the whole system. In other words, Russian IT specialists see all those values that are related to their professional competences as the most important. The connection-integration of all other - peripheral values is one and a half to two times lower than the connections with the core values. Such connections are minimal in such a node of values as ideal values. They are also low in the node of other person's values. These data show that values of social and humanitarian sense, values of self-analysis and aspiration to reformat oneself, "to adjust to the situation" are less relevant for Russian IT specialists. Hence, some researchers rightly conclude

that introversion is not always inherent in Russian IT professionals[465], moreover, it can be implemented in a variety of behavioral strategies in different ways[466].

We can generalize that this is a value system with a precisely expressed priority of professional interests - digital values - and is quite (moderately) related to all other values.

Location of values of socio-professional group of Chinese IT professionals. The integration of Chinese IT professionals is the most significant in terms of the value network potential correlation coefficient. The value potential of these values network is the largest, Kcps=1.30. Another important difference of this value system lies in the fact that it is the only system where scientific values form its core. In all other cases, digital, technical, technological values form the core of the value system. The third distinctive feature is the place of ideal values, in the present case they occupy the next place after scientific values, i.e. the second place. A similar situation is found in the value system of American IT specialists, however, in the latter case they share this place in the hierarchy with another group of values - scientific values. In other words, the central values of Chinese IT professionals are scientific contemplative values, values of a special order, and only after those sensual values (pragmatic, rational values). The digital values of Chinese IT professionals ranked 4th penultimate in the hierarchy, which is also a unique situation. Like Russian IT specialists, Chinese IT specialists' values of another person occupy the last place with a rather significant gap from the previous group of values - technological values. This gap amounted to 0, 58 points.

It should be said that all other analyzed values are in a significant relationship with each other. See Table 2.4.3.

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[465] Kurbanova Z.H., Ismailova N.P. Information-psychological security of the individual in pandemic conditions // MNCO. 2021. №4 (89). C. 147.

[466] Rayanti M.H. Emotional and personal characteristics and coping behavior of students studying in programming-related specialties (in relation to the tasks of psych correction) // FORCIPE. 2019. No.-Appendix. C.1017.

Table No. 2.4.3 Connections of value nodes in the value system of Chinese IT professionals

China	Sensual	Ideational	Scientific	Human	Digital
Sensual	-				
Ideational	0,62	-			
Scientific	0,64	0,64	-		
Human	0,51	0,47	0,50	-	
Digital	0,59	0,57	0,56	0,44	-

As can be seen from the table, almost all correlations here were equal and more than 0.5 point of correlation coefficient. These are significant and strong connections. The strongest connections are recorded between the core - scientific values - and values of the socio-philosophical order - sensual and ideal values (Ksv=0.64 in both cases).

In general, we can say that the value system of Chinese IT professionals is a highly integrated group of values with harmoniously formed values of different characteristics. The core of this system is formed based on a unique combination of scientific, sensual and ideal values, which take priority positions in relation to digital values.

Location of values of the socio-professional group of American IT specialists. We can say that the system of values of American IT-specialists in its structure expresses E. Durkheim's idea of organic solidarity, where actors are little connected with each other by their feelings, experiences, common interests, and common values. Rather, the interrelationships in the organic solidarity system are more formalized and implemented through functionally assigned responsibilities, clear and hierarchically defined relations, precise definition of all basic organizational relations and organizational culture. The value of the indicators of the core values of American IT specialists - digital and technological values - is only insignificantly different from the value of the indicators of scientific and ideal values (Кцпс=1.04). Thus, the core of values is made up of digital, ideational, and scientific values. In some respects, such a core of values coincides with the characteristics of Chinese IT specialists, but it is significantly less weighted and less connected than those of Chinese IT specialists.

Digital values are twice as high as other person values (Kcps=0.54) and two and a half times higher than sensual values (Kcps=0.38). Within-network linkage rates between value groups are small, ranging in linkage coefficient from 0.11 to 0.22. These are about two times less significant connections than those of Russian IT specialists and about four times less than those of Chinese specialists.

Minimal connections are recorded around the values of the other person, i.e. in the network of values of American IT specialists the values of other people are the least connected. See Table 2.4.4.

Table No. 2.4.4 Connections of Value Nodes in the Value System of American IT Professionals

U.S.A.	Sensual	Ideational	Scientific	Human	Digital
Sensual	-				
Ideational	0,18	-			
Scientific	0,17	0,19	-		
Human	0,11	0,14	0,14	-	
Digital	0,17	0,20	0,22	0,16	-

Contrary to some points of view about the high degree of pragmatism of American IT specialists, the importance of sensual values in the network of values is low, the coefficient of the value potential of sensual values is minimal, (Kcps=0.38). This suggests that in the present case, the respondents have rather different attitudes towards the problem of realizing their achievements in the external environment, for example, the problem of promoting the produced product. On the contrary, ideational values of American specialists are more than twice as important as sensual values. This is a special situation in which the ideational values are more important and essential for IT professionals than the sensual ones. It is also found in the group of Brazilian IT professionals.

In essence, the network of values of American IT-specialists turned out to be poorly connected and poorly integrated, which indicates that values are disconnected and poorly integrated, i.e. a low level of interaction and mutual understanding at the level of values. Most likely, this fact can be explained by the multinational composition of IT specialists, as well as the peculiarities of the American mentality, which is formed

in a special way and reflects the symbiosis of various social systems. In special studies devoted to the analysis of the American mentality, for example, in the studies of Yu. V. Panova emphasizes that "due to its uniqueness and originality, it is advisable to study American society only from the perspective of the symbiosis of various social systems, since none of them can fully reflect the present state of affairs, as demonstrated by actual examples from different spheres of structural elements of this society".[467] Actually, in our opinion, this situation is reflected by the network of values of IT specialists, which in some respects is similar to the network of values of Chinese IT specialists, in some respects to the network of Russian IT specialists, in some respects to the network of Brazilian IT specialists. In any case, the value network of American IT specialists suggests the relevance of a depersonalized approach in the activities of these specialists since their connectedness at the level of values is low.

The location of values of the socio-professional group of Brazilian IT professionals has its own differences, the specifics of which are characterized as a hypertrophied superiority of digital values. First, it should be noted that the values of digital technologies in this network are not just central, but the digital values of Brazilian IT professionals are weightier than the totality of all other values in terms of the coefficient of value potential. Thus, the coefficient of value potential of the group of digital values is Kcpc tsc=1.5. In the aggregate of all other values, this coefficient Kcpc of all other values=1.14. Thus, digital values are 0.36 weightier than the totality of all other values.

Secondly, this is the only situation where the coefficient of the value potential of the scientific values group had a small negative value, (Scientific Values Coefficient = -0.03). This situation characterizes some peculiarities in the evaluation of the role of scientific knowledge for the performance of Brazilian IT professionals.

Thirdly, this is the only situation where the value of the other person is recognized as significant, following the value of digital technologies (Coefficient of

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[467] Panova Y. V. American society as a symbiosis of social systems // Society: philosophy, history, culture. 2022. №4 (96). 56-59.

the other person = 0.75). We emphasize that the value of this coefficient is half the value of the digital technology value coefficient (Digital Technology Coefficient = 1.5). All other values are considered as less significant. See Table 2.4.5.

Table No. 2.4.5 Relationships of value nodes in the value system of Brazilian IT professionals

Brazil	Sensual	Ideational	Scientific	Human	Digital
Sensual	-				
Ideational	0,07	-			
Scientific	0,03	0,04	-		
Human	0,06	0,08	0,15	-	
Digital	0,15	0,20	0,20	0,20	-

Fourth, in the case of the value network of Brazilian IT professionals, we are dealing with the weakest network ties. In total, these ties amount to 0.12 points of average values, about the same as in American IT professionals, where this indicator is 0.13. For comparison: in Russian specialists - 0.34, in Chinese specialists - 0.56. The minimum values of the connection coefficient are observed around the group of values of science (0.04 with the group of sensual values and 0.03 with the group of ideal values), i.e. socio-philosophical and scientific values in the present case fix the minimum value. Like the value network of American IT professionals, the intra-network ties in Brazilian IT professionals constitute non-minimal values at the level of statistical error.

In general, characterizing the network of values of Brazilian IT professionals it should be said that it is a weak network with a strongly pronounced nucleus - digital values. A network where the value of the value of the other person is pronounced and in fact with minimal values of science values.

A country-based typology of socio-professional integration of IT professionals.

The study of the typology of socio-professional integration of Russian IT specialists involves the identification of stable recurring characteristics of the system of values that answer the question of how, in what way a socio-professional group of IT specialists is included in the Russian social space, in society and forms social ties

with its social institutions[468] . With all the variety of strategies, technologies and procedures for forming common values of Russian IT specialists, we can talk about two directions of their socio-professional integration, in fact, such types are determined by the priority of social or professional in the network of values:

a) with the priority of the social component of the formation of values, which harmoniously fit into the values of society, correlate with the values of society, are in a set of commensurable relations with social values of other orders. In this case, we can speak about the *socially harmonious direction of integration*;

b) with the priority of professional values of forming a common network of values, i.e. ties and relations that arise on the basis of predominantly professional goals, interests, etc. of activity. In this case we can talk about *one-dimensional professional integration.*

In the ideal type, four types of socio-professional integration of Russian IT specialists can be formed at the intersection of the shown directions of value formation, which are shown in Figure 2.4.2
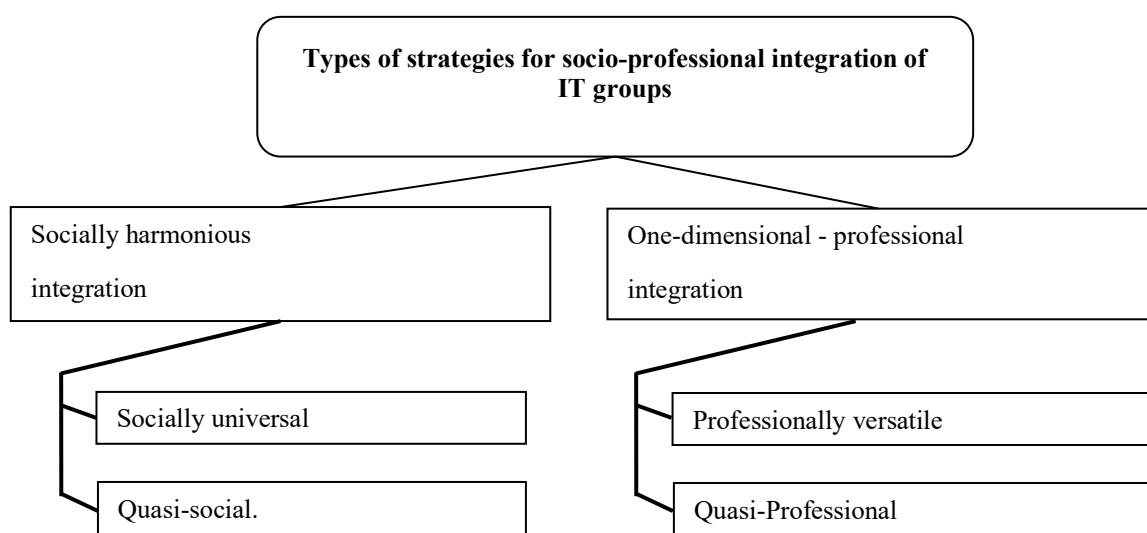

Fig. 2.4.2 Types of strategies of socio-professional integration of IT groups

[468] Deryugin P.P.,Bannova O.S., Yu Yang, Empirical Approbation of the Provisions of the Integral Concept of P.A. Sorokin in the Study of the Values of IT Specialists (On the Example of IT Groups in Russia, PRC, Brazil, USA), Proceedings of the All-Russian Scientific Conference XVI Kovalev Readings

The reality of the existence of such types of socio-professional integration of IT groups is evidenced by the results of the empirical study. They are given in Table No. 2.4.6 and shown in Figure No. 2.4.2.

Table No. 2.4.6 Range of maximum and minimum values of Kcpc by value subsystems

Countries	Total coefficient value potentials networks	Range of values value indicators (Mach - Min)	Note
Russia	**0,48**	2,30 - 1,10=1,**20**	Intermediate value of the spread
China	**1,30**	2,34 - 1,38=0,**96**	Intermediate value of the spread
U.S.A.	**0,13**	1,04 - 0,38=0,**66**	Minimum span
Brazil	**0,06**	1,50 - (-0,03)=1,**53**	Maximum span

In the present case, the *overall coefficient of the value potential of IT groups in the* countries studied shows the measure of cohesion-integration of IT professionals in these countries with respect to the values that have been proposed for evaluation. This coefficient is calculated as the average of the correlation coefficient between all value indicators.

The range of values of the value subsystem indicators (Max - Min) shows the size of differences between the largest and the smallest values of value indicators among respondents - IT specialists of a particular country. It is calculated as the difference between the highest and the lowest values of the results of observations. This measure shows how differently certain value indicators can be assessed: the greater the spread, the more diverse the assessments of the same events, phenomena, values will be, which in turn characterizes the group as heterogeneous or homogeneous.

The combination of the measure of social cohesion and homogeneity/diversity allows us to speak about four typical situations of integration (Fig. 2.4.3).

1.   *The socially universal type of integration of IT specialists* should be considered as a set of goals, strategies, principles and technologies of integration, which are oriented to multiple directions of social development, are formed in different social conditions, and are able to reflect, take into account and connect with the interests of various organizations, groups and institutions of the Russian society. The

universality of this type of integration lies in the potential for the formation of interrelationships between any types of values.

Types of socio-professional integration of IT specialists as a correlation between the value potential of the network and the range of values of the value indicators

Maximum values the value potential of the network

1,3

Social-universal type of integration, China:
- the highest unity of values - 1.30
- indicator spread is small - 0.96

Maximum span indicators

Minimum span indicators

Mix of social-simulation and quasi-professional types of integration, Brazil:
- minimal unity of values -0.06
- indicator spread is the largest - 1.53

0,48

Professional-universal type of integration, Russia:
- low unity of values - 0.48
- indicator spread is large - 1.20

Social-simulation type of integration, U.S.A:
- minimal unity of values - 0.13
- minimum indicator spread - 0.66

0,13

0,06

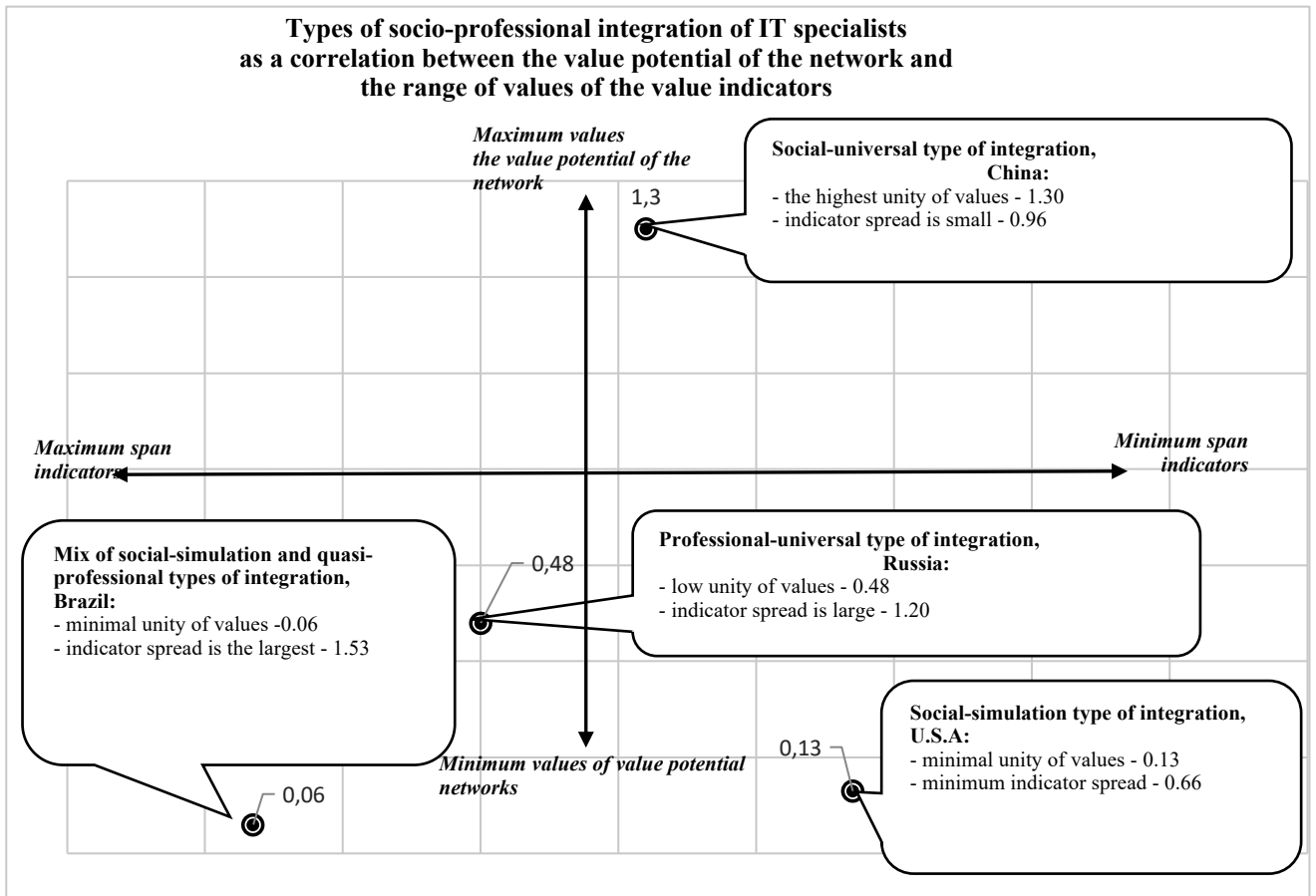*Minimum values of value potential networks*

Fig. 2.4.3 Types of strategies of socio-professional integration of IT specialists as a correlation between the value potential of the network and the range of values of value indicators

The main features of IT specialists' values in this case consist in their harmony with the values of various social actors, which are distinguished by their meaningful connectedness, meaningful power and different content. In this case, the professional interests of IT specialists "follow" and are formed "in accordance with" the nature of the social orientation of society development, correlate with social interests and, in general, "work for" social goals. In our study, to the greatest extent this type of integration was characteristic of Chinese socio-professional groups of IT specialists. Here the strongest connections and the highest values of weighting characteristics of social in nature values were recorded. As it was shown, the central place in the value

system of IT specialists is occupied by values related to socially important and scientific values.

2.   *The social-simulation or quasi-social type of integration of IT specialists is* similar to the social-universal type of integration of IT specialists externally and in its intragroup structure. This similarity is first of all expressed in the identity of the value structure, where the interests of professional activity are in interrelation with all other types of values. However, this type of integration differs significantly from the socio-universal type of integration by the priority of pragmatic goals and values of professional activity. In the present case, the values of IT specialists are predominantly oriented towards the achievement of narrow-utilitarian interests of professional activity. The links of values of different orders are not so strong, not so significant. In general, they are outlined, but more often they may have a purely formal superficial character. In this case, the values of attitude to other people against the background of the importance of professional values differ significantly. The priority of values of the digital, technical and technological order is obvious. In our study, to the greatest extent this type of integration was characteristic primarily of American socio-professional groups of IT specialists. At the same time, it is important to emphasize that the values reflecting the interests of utilitarian use of IT technologies for American IT specialists had minimal values: everyone is engaged in his/her own business - the task of an IT specialist is to develop an IT product, its promotion is the business of other specialists.

3.   *The professional-universal type of* IT *integration is* a set of integration goals, strategies, principles and technologies that are maximally oriented towards the meaningful realization of professional - digital technologies and values. In the present case, universality lies in integration with all facets and sides of IT development. In this case, the values of the digital professional order are seen as a one-dimensional, primary, in fact sometimes the only direction of interaction with the interests of other social organizations, groups, and institutions with which interaction is carried out mainly or even exclusively in the interests of digitalization. Connections with the values of other orders are significant, but they are less substantial than is typical of the conditions of

the socio-universal type of integration of IT specialists. Other types of social values are equidistant and minimal links are recorded between them. In our study, to the greatest extent this type of integration was characteristic of Russian socio-professional groups of IT specialists. In the groups of Russian IT specialists, the authority of digital, technical and technological values is undoubtedly high, and all other values are viewed through the prism of their realization.

4.   *The quasi-professional, professional-imitation type of integration is* outwardly similar to the professional-universal type of integration of IT specialists. Here, too, professional values play the most significant role, they are given a clear preference and priority, which times exceeds the authority and significance of all other values. All other values are recognized as unimportant, they are considerably removed from the values of the professional order, and there are minimally significant connections and dependencies between these values. Professional values are minimally connected with the values that ensure and develop professional activity. On the contrary, values that are less connected with professional activity proper, such as human relations, may be even more important than those values that contribute to the realization of professional values. But in this case, it is not a social priority of such values, rather it is a spontaneous state that is dictated by the social situation or mentality.

In our study, Brazilian socio-professional groups of IT professionals were most characterized by this type of integration.

Result 2: Value groups and their dichotomies as a source and factor of social integration of IT professionals generalized analysis.

The summarizing result of the connectedness of values of IT specialists from different countries is shown in Figure 2.4.4. The analysis of the presented network shows that Chinese IT specialists are distinguished by the highest intragroup integration of values. The value potential index of their network is 2.7 times higher than that of Russian IT specialists, 10.0 times higher than that of American IT specialists, and 21.6 times higher than that of Brazilian IT specialists. Moreover, it can

be argued that the values of Chinese IT specialists are practically opposed to the values characteristic of Brazilian IT specialists.
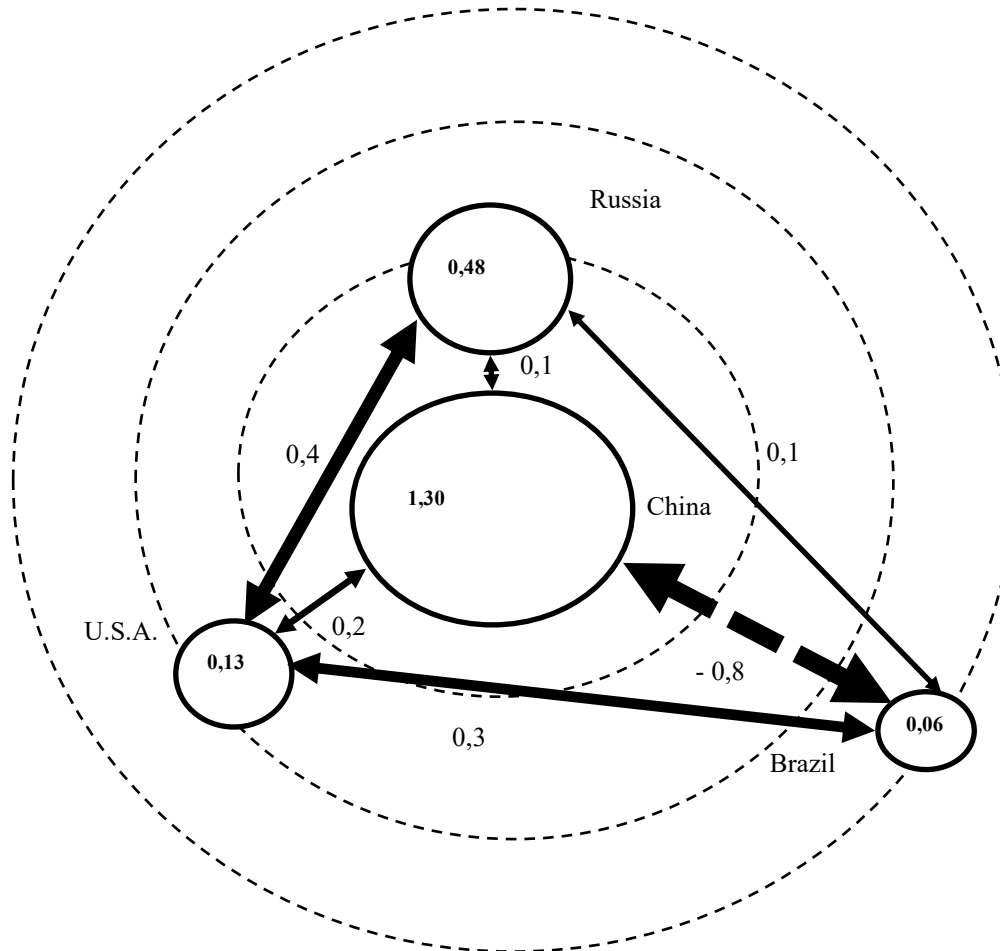
Fig. 2.4.4 Network characteristics of integration of values of socio-professional groups in Russia, China, USA and Brazil (country approach)

It is enough to recall that scientific values, which in the network of Chinese IT professionals are the most important, significant, and valued values - scientific values, are evaluated differently in Brazilian IT professionals, rather with negative values. The values of Chinese IT professionals, in general, seem to be "kept apart". It should be reminded that the connectedness of the network of values of Chinese IT-specialists is connected with negative connection not only with Brazilian IT-specialists, they are also minimally connected with the values of American and Russian IT-specialists (Кцпс=0,02 and 0,01 - respectively).

As for Russian IT specialists, the value potential of their network is quite significant (Ксрs=0.48), it is a network that has some correlation with the values of

American IT specialists, to a lesser extent with Chinese and Brazilian IT specialists (Ksv=0.4 with American IT specialists, Ksv=0.1 with Chinese and Brazilian IT specialists).

The values of American IT specialists are characterized by a low value potential, but at the same time it is the network that is most correlated with the value networks of Russian IT specialists (Ksv=0.4), Chinese (Ksv=0.2), Brazilian (Ksv=0.1). Taken together, this suggests that the value network of American IT specialists is the most open to interaction with the values of other IT specialists.

As already shown, it is easier for Brazilian IT professionals to find a common language with American IT professionals, a little more difficult with Russian professionals and quite difficult with Chinese professionals.

Table 2.4.7 summarizes the total values of the value groups for the whole set of IT specialists' values indicators in all the countries studied. Table No. 2.4.8 shows the correlation of IT specialists' value groups in the analyzed countries among themselves.

Table No. 2.4.7 Ratings and Relationships of Value Groups of IT Professionals of Different Countries

	Sensual	Ideational	Scientific	Human	Digital
Total weight value groups	-0,07	-0,09	-0,05	0,04	0,62

Based on Table No. 2.4.8, a network of connections of values of different groups was constructed (summarized data on the results of the empirical study in Figure 2.4.5).

Table No. 2.4.8 Ratings and Relationships of Value Groups of IT Professionals of Different Countries

correlation	Sensual	Ideational	Scientific	Human	Digital
Sensual	-				
Ideational	- 0,06	-			
Scientific	- 0,08	- 0,01	-		
Human	- 0,03	0,25	0,13	-	
Digital	- 0,21	0,34	0,20	0,47	-
Total, aggregate connections by values among respondents of all groups (cf. art.)	- 0,095	0,13	0,24	0,21	0,20
Weight, as the unity of value evaluation by all respondents at the same time	- 0,07	-0,09	-0,05	0,04	0,62
Final CPS by group values	-0,007	-0,012	-0,003	0,001	0,12
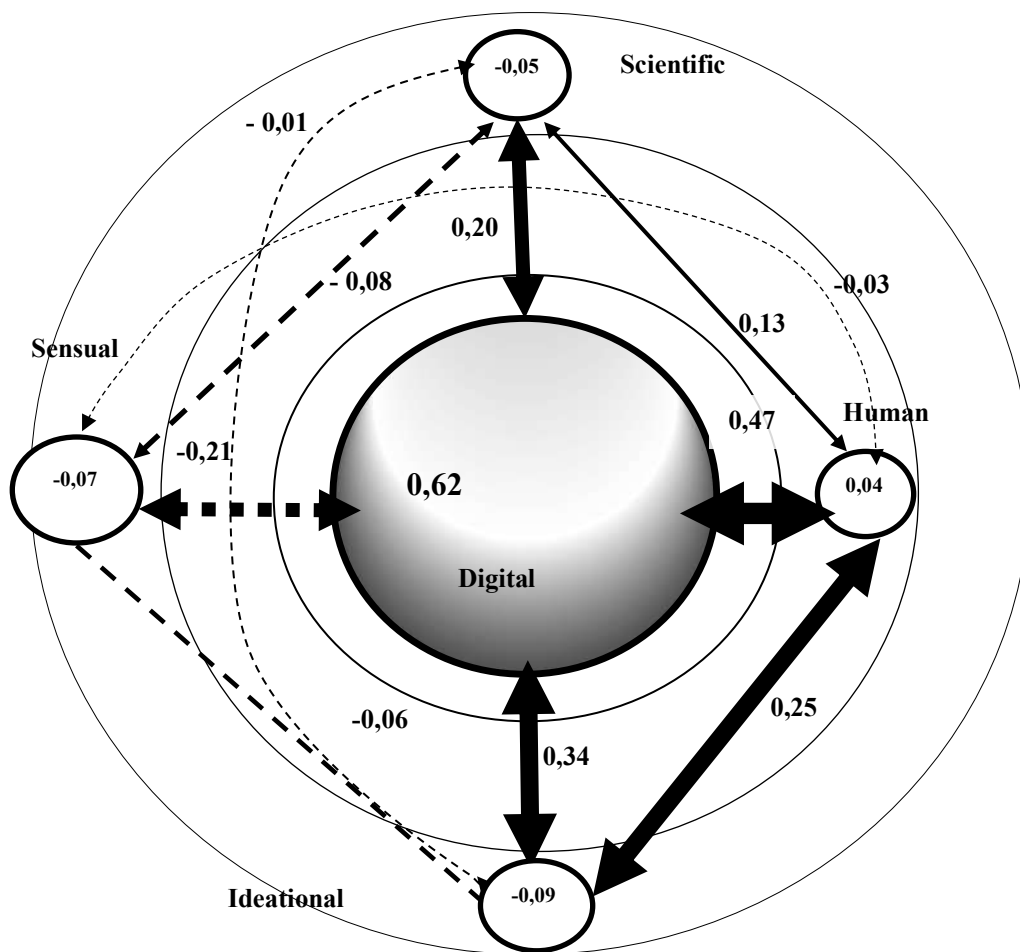
Fig. 2.4.5 Network of values of the socio-professional group of IT specialists (integrative approach)

In the present case, the weighting characteristics of the value groups were calculated on the basis of analyzing the relationship of the correlation matrices combining the indicators of the indicators of each value separately between the data of IT specialists of the countries under study, as well as pairwise between each matrix with the matrix of values of every other group. Attention is drawn to the fact that between the groups of values of IT specialists there are many connections that can be characterized rather as negative. This applies to the groups of sensual, ideational, and scientific values (Figure 2.4.6).

Human values are also characterized by the minimum value of the coefficient of value potential of the network, Kcps=0.001. That is, the total negative coefficient of the value potential of the network of IT specialists in the present case is Kcps of

negative links = -0.022. At the same time, the coefficient of the value potential of the whole network is positive, Kcpc of positive links = 0.12, which occurs practically only due to the positive value potential of digital competences.
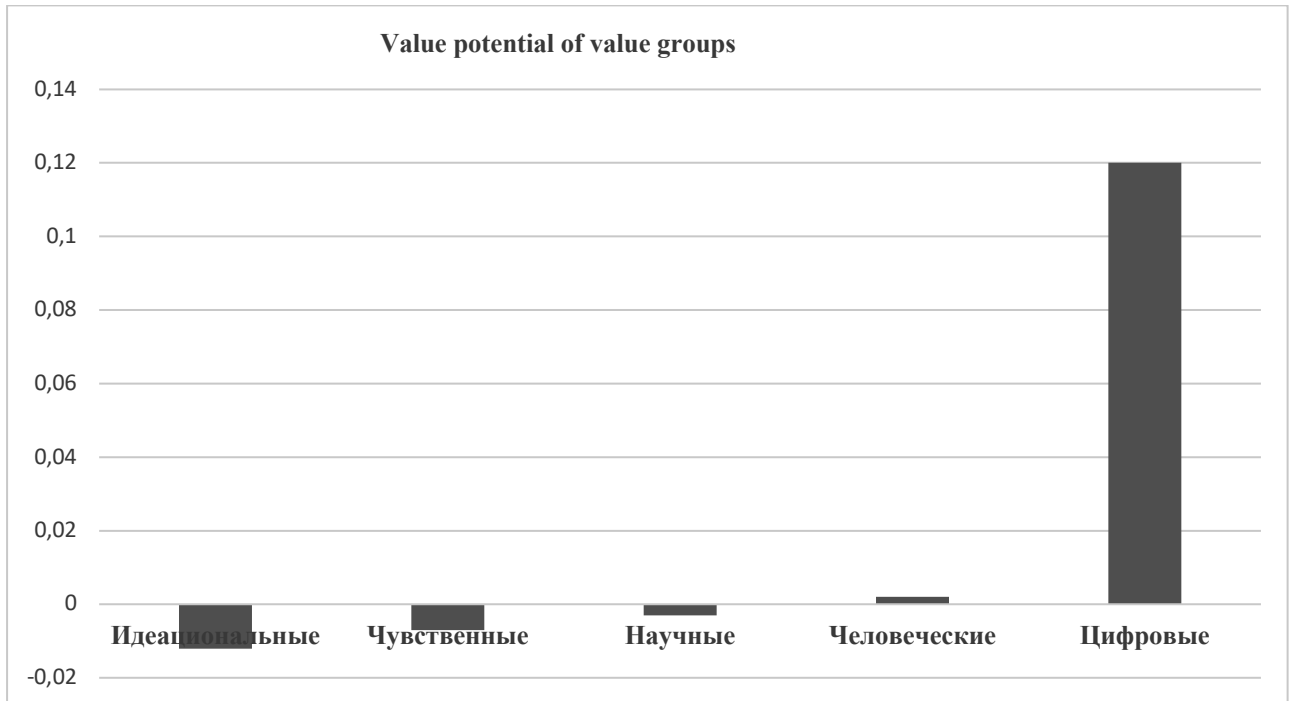
Figure 2.4.6 Value potential of value groups

Thus, for all the differences that emerge in different spheres of IT professionals' activities, their integration on the basis of a common understanding of digital values will be many times more important and significant than integration/disintegration in all other spheres of interaction. In general, this suggests that in groups of IT professionals, attitudes towards values of a different - other order than digital order values - are quite complex. This is not accidental. In fact, any values are always a choice and the construction of hierarchies of these choices, which in itself involves solving difficult dilemmas in favor of certain values. By representing different countries and different meta characteristics, IT professionals demonstrate the complexity and diversity of social inclusion beyond certain social circumstances and country-specific operating environments.

The presented Table 2.4.8 and Figure 2.4.7 of the network shows that the greatest value for IT specialists is played by digital technologies, i.e. technical and technological aspects of their activities, which gain the highest rating, Kcps=0.12

points. In the second position in terms of significance and importance are the values of another person, Kcps=0.001. Scientific values are in the next position, their value is Кцпс=0.003. The next in the rating are the sensual values, Kcps=0,007. Ideational values close the list of values by the degree of their value potential, their Кцпс=-0,012.

	Value groups	
Sensual	Ideational	Scientific	Human	Digital

- 0,06	Sensual - Ideational	Ideational - Human	0,25
- 0,08	Sensual - Scientific	Scientific - Human	0,13
- 0,03	Sensual - Human.	Ideational - Scientific	-0,01
- 0,21	Digital - Sensual	Digital - Ideational	0,34
0,47	Digital - Human	Digital - Scientific	0,20
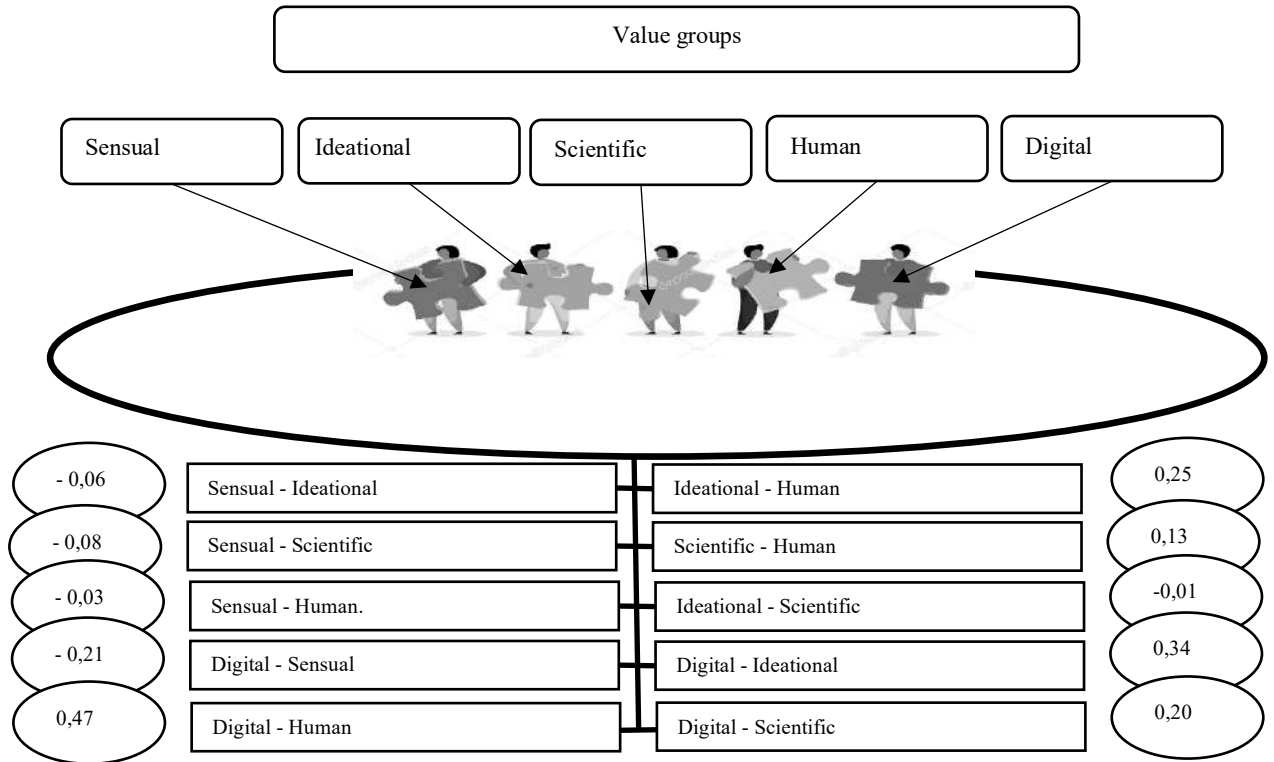
Fig. 2.4.7 Dichotomies of IT specialists' values as sources and factors of socio-professional integration (generalised data)

The impact of value dichotomies on the integration of *IT* professionals

	Цифровая - Чувственная	Чувственно - Научная	Чувственная - Человеческая	Чувственная - Человеческая	Идеациональ ная - Научная	Научные- Человеческие	Цифровая - Научная	Идеациональ ная – Человеческая	Цифровая- Идеациональ ная	Цифровая - Человеческая
Ряд1	-0,21	-0,08	-0,06	-0,03	-0,01	0,13	0,2	0,25	0,34	0,47

Figure No. 2.4.8 Integration potential of IT professionals' value dichotomies

The overall balance of the influence of value dichotomies on the integration of IT professionals. Among the 10 dichotomies shown, 5 influence the positive integration of IT professionals' values. The dichotomies that have the most active influence on the integration of IT professionals are those that are formed on the basis of the interrelationships of digital values wi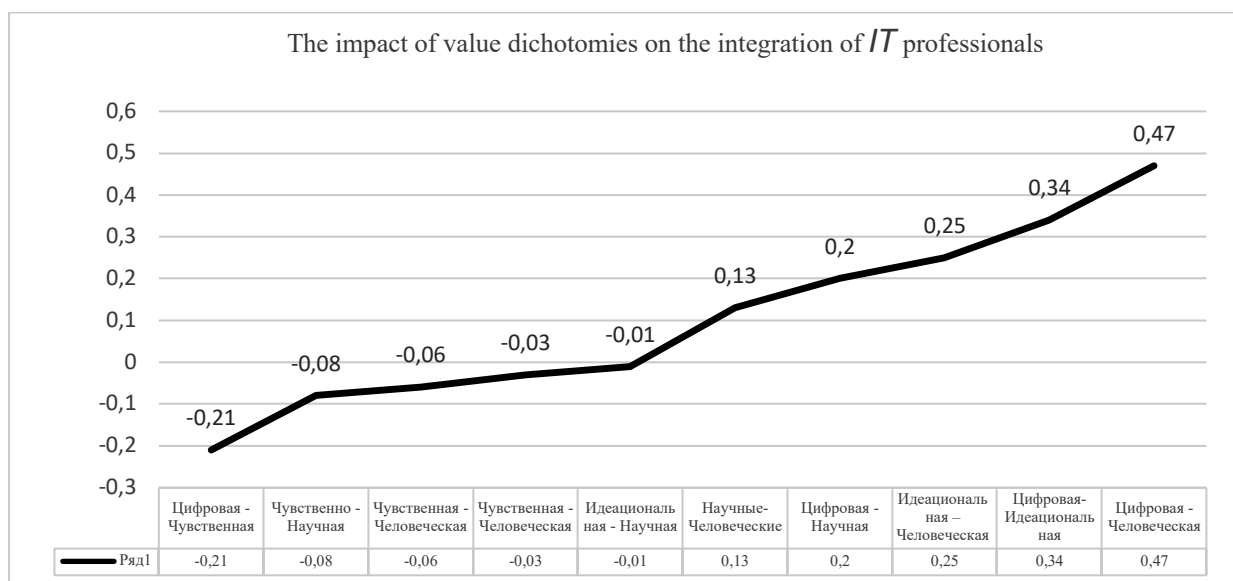th other types of values (digital-human - the most significant influence; digital-ideal; digital-scientific). The overall integration potential of these dichotomies is - 1.01. Also, by frequency of manifestation in the integration potential of IT specialists, dichotomies in which human values are fixed are manifested, there are also three of them (digital-human; ideational-human; scientific-human). The total potential of these dichotomies is - 0.85 points. There are two dichotomies each, which are formed on the basis of ideational (digital-ideational; ideational-human. Potential - 0.79) and scientific values (digital-scientific; scientific-human. Potential - 0.33). Overall, the balance of positive potential influence dichotomies is higher (+1.39) than the balance of negative potential (-0.39). Those dichotomous polarities whose components are sensual values have practically no influence on the positive integration of IT specialists.   The graph presented above, on the contrary, shows that the values of sensual culture in the dichotomies negatively affect the integration of the socio-professional group of IT specialists. Most likely, the values of the sensual order are perceived by IT specialists as values of the past, of the passing world. In any case, this was repeatedly mentioned by P.A. Sorokin, emphasizing that the sensual culture of the modern world has entered the phase of overripens[469] and reflects the values of a society in decline.

Dichotomy of values human - science. According to the results of this study, in the attitudes of IT specialists in the choice between scientific (rational) and human (irrational) values, there is a certain, although small, but positive consensus, Ksv=0.13. For the present case, for this network, this is an important result, although this difficult

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[469] Sorokin P.A. M. Social and Cultural Dynamics. Astrel, 2006.- 1176 p. C.29.

choice is characterized by scientists as one of the central problems of modern science[470] and the multidimensionality of this problem is emphasized: the choice between the rational and the irrational is becoming increasingly complex. The resolution of these peculiarities is seen as a catastrophic situation: "the situation of tension, conflict between natural-linear and non-linear models of thinking is related to the dangerous prospects of modern humanity, appealing again to the objective character of such catastrophic development".[471]

The dichotomy of sensual values - human values. By analogy with P.A. Sorokin's classification, sensual values in this study are understood as IT specialists' relations with the external environment and interests of transforming the external environment on the basis of the produced product. Characterizing sensual relations L. Von Wiese emphasises that in the conditions of sensual culture "The relationship between people is understood as an organisational economic relation or is based on the totalitarian machinations of political forces"[472] . In the present value network, the pairing of these values is characterized as insignificant, negative, Ksv=-0.03. As is evident, this relationship is predominantly relevant to IT managers. Sensual values are predominantly formed by, supported and developed by IT managers. Besides IT managers, these values are also supported by the supporting personnel (managers, marketing specialists, etc.). As for programmers, sensual values are rather alien to them. In general, for IT specialists the choice between *human and sensual values is* decided in favor of human values, and the aspiration of IT specialists to change and transform the external environment is rather forced than internally accepted. Indirectly, this is also confirmed by the fact that the *relationship between human and ideational values* - opposite to sensual *values* - in this network is significantly positive, Ksv=0.25, i.e. at least not negative.

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[470] Krupinina E. A. Evolution of views on the problem of the relationship between rational and irrational (philosophical aspects) // TSU Herald. 1996. №1. C. 90.

[471] Dunayev R.A., Kuznetsov A.. V. Global network communication and rational man // nomothetika: Philosophy. Sociology. Law. 2021. №4. C. 665.

[472] Von Wiese Leopold Ideational and Sensual Culture: Towards P. Sorokin's Teaching on the Dynamics of Social Life // ZhSSA. 2021. №3. C. 44.

Dichotomy digital values - human values. This is the most significant positive relationship (Ksv=0.47), which reveals that ultimately the development and development of new digital technologies is linked to the human capital of IT professionals. According to IT professionals, nothing else, neither science nor any other factors are as significant for the development of digital technologies as it is related and dependent on the quality of human capital of developers.

Dichotomy digital values - scientific values. Scientific values occupy a significant place in the IT specialists' value network by the weight of the value potential coefficient, Ksv=0.20. The connection of these groups of values is especially significant in the network of values of Chinese IT specialists, it is also characteristic of Russian IT specialists. As for American and Brazilian IT-specialists, such a connection is recorded at the level of mathematical error.

For all the differences, in the most general way *scientific values are rather important and meaningful only in relationship with human and ideational values*, and as can be seen in Fig. No. digital-human-ideational-scientific and human values are connected by rather strong and relevant links.

The dichotomy of ideational - digital values. As L. Von Wiese shows, "under the concept of "idealization" is meant the spiritual, ecclesiastical, anti-sensual, ascetic and at the same time abstract. In 'idealism' lies the tendency to metaphysics and religious comprehension of the world and life"[473] . In the end, ideal values purposefully direct human activity towards self-improvement, self-explanation, rational explanation of oneself in the surrounding world. In the network of values of IT specialists the correlation of ideal and digital values is important and significant.

The dichotomy of digital values - sensual values. Digital technologies are created by IT specialists in the interests of forming a digital society. At the same time, different correlations between digital values and sensual values in different social situations are

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[473] Von Wiese Leopold. Ideational and Sensual Culture: Towards P. Sorokin's Teaching on the Dynamics of Social Life // ZhSSA. 2021. №3. C. 43.

formed in a peculiar, different way. In general, this correlation is weakly negative (Ksv=0.21).

The dichotomy sensual values - ideational values. The final model of the network of values of IT specialists shows that this relationship is weakly negative (Ksv=-0.06).

It can be said that the integration of IT professionals' values in different countries has its own unique features. For example, Russian IT professionals place a high value on digital and technical competencies, Chinese IT professionals place a higher value on contemplative science values, and American IT professionals tend towards digital, ideational, and scientific values. Brazilian IT professionals, on the other hand, pay attention to both digital values and the value of the other person.

Conclusions to Chapter 2.

Each group of IT professionals has unique values and priorities, which can influence their interactions and co-operation in the work environment. There are several types and subtypes of IT integration strategies, which can be social-universal, one-dimensional-professional, quasi-social or quasi-professional.

The correlation between the values of IT specialists of different countries shows their ambiguous nature. The densest connections are revealed in the pair of Russian-American IT specialists, the least connections in the pair of Chinese-Brazilian specialists, in the latter case these connections turned out to be negative. The conducted empirical study has shown the significant heuristic potential of P.A. Sorokin's concept as a scientific platform for prospective studies of IT specialists' values and their sociological diagnostics.

Conclusion

In the modern world, the process of digitalization affects almost all spheres of life, posing new challenges for sociology related to analyzing the interaction between high technologies and society, ensuring its social sovereignty, and technological independence. The formation of digital infrastructure in the form of databases and IT technologies brings up issues regarding the digital transformation of society. In this context, the sociodynamics of IT specialists' integration is considered both as an internal process - the formation of a unified value system within the IT professional community, and as an external process - the unity and differences between the values of IT specialists and other population groups. Furthermore, the advent of humanity into the era of global changes leads not only to the transformation of forms and content of life but also to the transformation of social relationships as a whole.

As the results of the dissertation research indicate, for a more accurate and comprehensive understanding of the values of IT specialists and their role in society, systematic studies covering various aspects of their lives and professional activities are necessary. Such studies can help identify the core values and beliefs of IT specialists, their motivation, expectations from work, as well as their attitude towards social problems and challenges of modernity related to technological development and digitalization of society.

It is important to note that when conducting research on the values of IT specialists, their diversity and heterogeneity as a professional group should be taken into account, including specialists of different levels, fields, and professional orientations. Additionally, gender, age, and cultural differences within this group should also be considered as they may influence their value orientations.

Therefore, a broader and more systematic study of the values of Russian IT specialists could provide a more comprehensive understanding of the role of this professional group in public life, their impact on social processes, and their contribution to the social integration of Russian society.

The concept of P.A. Sorokin might hold significant importance for studying the values of Russian IT specialists. His integral theory of society, based on the understanding of social values, could aid in comprehending the dynamics and evolution of values of IT specialists in the context of societal development as a whole. Moreover, within the framework of P.A. Sorokin's theory, values are considered complex phenomena that interact with many other social factors. This allows for the examination of the values of IT specialists in the context of their professional activities and the overall social structure, as well as determining the connections between values and other aspects of social life. Sorokin's theory enables the prediction of future trends in the development of IT specialists' values, which could be crucial for the development of socio-economic and cultural strategies for societal growth. Utilizing P.A. Sorokin's concept for studying the values of Russian IT specialists is a valuable contribution to understanding various aspects of social life and societal development as a whole. The values of IT specialists are fundamental formations upon which a new type of society is being shaped - the digital society. These values can be examined from different perspectives and aspects, reflecting their interdisciplinary nature and multifaceted characteristics as an object of study and theoretical model. Values can be considered as properties of something, phenomena, objects, temporal parameters, elements of a measurement system, elements of activity structure, scientific categories, and characteristics of development direction.

The key hypothesis that assumed that the main characteristics of values and value orientations of IT-group specialists will determine the strategies of their integration behavior and integration into society has been generally confirmed. The socio-professional values and orientations of IT specialists are of great importance for their integration into society and interaction with representatives of other professional groups. However, despite the fact that IT specialists have similar values within their group, their relations with other professional groups depend on the specific situation and specific professional competences.

Another important finding is that developing the social competence of IT professionals should be a priority for organizations, as this competence is of direct importance for effective interaction with other professional groups and integration into society.

Based on the analysis of P.A. Sorokin's integrative concept, it can be noted that IT specialists' values are of great importance for integration into society, which confirms the hypothesis. However, as the study shows, these values are formed differently in different societies, which is related to cultural and historical peculiarities of each country.

The hypothesis that the value of the other person in the value system of IT professionals will be less significant in comparison to technological values was partially confirmed. It is important to realize that cultural differences can play a big role in how values and priorities are formed. It is worth noting that digital values and technical competences are an integral part of the IT industry and their importance for IT professionals may be higher than for people working in other industries. However, the value of the other person is also important for success in business and interpersonal relationships, so it is important that IT professionals pay attention to this value, as Brazilian colleagues do.

The obtained results may have practical implications for companies hiring IT specialists in different countries. This understanding can assist them in better comprehending local values and candidates' expectations when recruiting staff.

The assumption that the localization of values would manifest differently in IT specialist subgroups, reflecting in the structure and hierarchy of values among IT group leaders, IT product developers, and IT company support staff, has been confirmed. The research results indicate that values in the IT sphere vary based on roles and positions within the organization. IT company leaders are oriented towards the external environment and scientific values, influencing the formation of the overall direction of the employee value network within the organization. IT product developers tend to lean towards digital and technical values, with "relating to others" values having minimal

significance. IT support staff hold an intermediate position and demonstrate a more balanced set of values. These outcomes can be beneficial for devising more effective personnel management strategies in IT companies and building more efficient teams within these companies.

The hypothesis that diversity in structural inclusion in IT specialist and IT group communities would manifest in the characteristics of values and value orientations has also been confirmed. The values of the socio-professional group of IT specialists differ from those of other social groups. Researching IT specialists' values requires specific sociological strategies and methodologies that take into account their professional sphere and social nature. Thus, the goals and objectives of this study have been achieved.

Based on the research results, positive recommendations have been developed aimed at utilizing the strong points of various value systems of IT specialists to strengthen Russia's scientific and technological independence and sovereignty.

Harmonization of values: the harmonization of values among Russian IT specialists is achievable by integrating their value orientations with a wide spectrum of social actors. This process focuses on establishing significant connections, identifying influential impacts, and recognizing the variable nature of value settings. Stimulating professional interests aligned with social aspects of development aims to create linkages with public interests and goals, considering their interrelation. For instance, representatives of the Chinese IT sector show high commitment and deep appreciation for socially oriented values. This experience could be beneficial for the Russian IT industry.

Focus on pragmatic professionalism: the positive aspect of focusing on pragmatic goals and professional values in the context of work lies in enhancing the professionalism and specialization of employees. This contributes to improving productivity, innovation, and work efficiency, potentially leading to higher achievements and advancements in information technology. This approach was

particularly evident among American IT specialists who prefer technical values over utilitarian interests. However, focusing solely on technical and professional aspects may limit interaction and communication within the team, reducing interpersonal skills. This could affect collective work, team building, and the overall atmosphere within the workgroup. Thus, it's crucial to maintain a focus on developing professionalism and pragmatism while simultaneously paying attention to the development of communicative and interpersonal skills. This helps preserve professional efficiency and makes employees more adaptable to collaborative work, enhancing team spirit and overall group effectiveness.

Strengthening professional integration: this represents a key strategy for integrating digital technologies and associated values into various aspects of technological development. Research indicates a deep interest among Russian IT groups in digital, technical, and technological values, significantly influencing other value systems. Emphasizing this approach is recommended as it promotes the universal integration of IT values into diverse developmental spheres, supporting their significance and contribution to the country's social and technological development.

Stimulating professionalism with a humane approach: recognizing the significance of professional values while simultaneously acknowledging the potential importance of non-professional values dictated by social or cultural contexts is important. A similar trend is observed in Brazilian IT groups where attention is given to professional values, but interest in interpersonal relationships is also evident. In the context of developing the Russian IT industry, this could be a crucial aspect requiring consideration in shaping the work environment and corporate culture. Training IT specialists in communication skills, leadership, and mental health development can be highlighted here. Advocating professionalism should align with fostering harmonious relationships within the organization. Cultivating a culture that doesn't overlook human aspects contributes to the effective functioning of the team. Such steps can contribute to the development of the IT industry in Russia, creating a more harmonious and efficient work environment.

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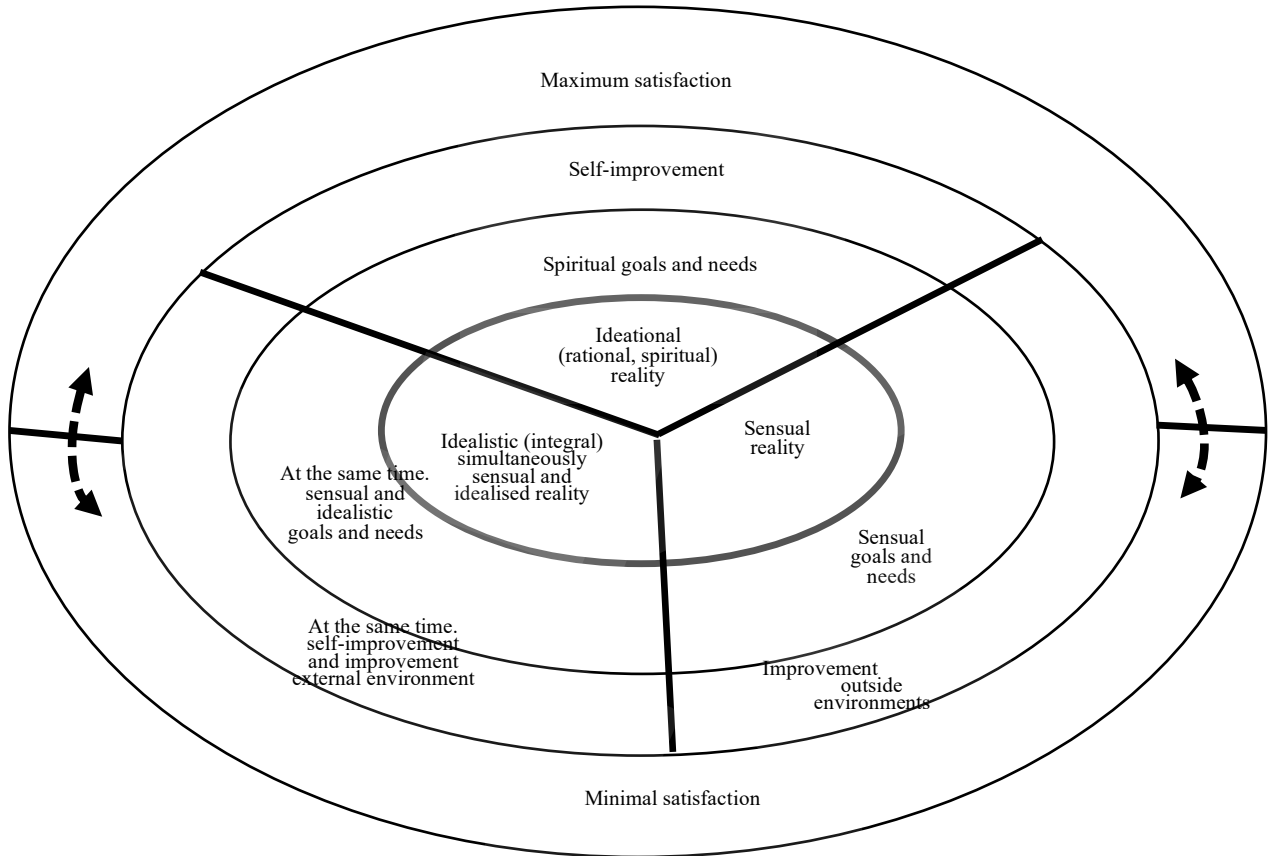
Appendix 1

Comparative characteristics of traits of communities and groups

Criterion	The social community is. (IT users)	The social group is. (IT Professionals)
Nature of origin (By F. Tennis)	Natural-natural, real-life integration	A mechanical, ideal, subjective-willed association. Created "specifically for" the fulfilment of needs and interests, to achieve goals
Conditions and factors of emergence	Similarity of conditions of being	Efforts of social institutions and individuals
Role in society	Ensuring evolutionary development of society	Enabling accelerations, leaps and revolutionary transformations of society (L. Gumpilovich)
Used to denote	Any associations, is the most general term (J. Szczepanski)	Any set of people living together and interacting together (P. Sorokin)
Participation in the socialisation of the individual	A natural transitional bridge, generally a passive beginning	An agent of secondary socialisation, in general - an active beginning
Solidarity	Natural, natural	It involves a certain amount of effort
Main characteristic as an object of research	Turning to analysing the sustainability of interrelationships	Addressing the analysis of sociodynamics by a set of objective and subjective criteria, internal and external indicators of integration
Manifestation of interests, emotions, feelings	Implicitly, more often than not passively, symbolically	Strong and clear
Presence of representatives with different characteristics (gender, territorial, religious)	More often than not, it's limited, not obviously	Gender, territorial, religious, etc. characteristics are of little importance. Characteristics of participants are assessed actively in terms of their influence on the achievement of common goals, realisation of interests and attitude to values
Role of the individual	Impersonalised	Active individualism
Internal communications	Minimal, around traditional forms	Close, active, presence of standards and norms around shared goals and values
Impact on personality	Weak	Significant
Cohesion	Amorphous	Strong
Values	Local	Uniform

Appendix 2

Criteria for evaluating the system of values in P.A. Sorokin's concept (compiled by the author on the basis of analysing P.A. Sorokin's work "Social and Cultural Dynamics")

Maximum satisfaction

Self-improvement

Spiritual goals and needs

Ideational
(rational, spiritual)
reality

Idealistic (integral)
simultaneously
sensual and
idealised reality

Sensual
reality

At the same time.
sensual and
idealistic
goals and needs

Sensual
goals and
needs

At the same time.
self-improvement
and improvement
external environment

Improvement
outside
environments

Minimal satisfaction

Appendix 3

The system of criteria for the study of values in P.A. Sorokin's concept (compiled by the author based on the analysis of P.A. Sorokin's work "Social and Cultural Dynamics")

The totality of values in society

Criteria for the study of the sociodynamics of values in sociology

Perception realities	Needs and purposes	Degree of satisfaction	Method of fulfilment

| Spiritual | Material (sensual) | Spirituals | Material (sensual) | maximal | Minimal | Self-improvement | Improvement of the external environment |

Basic super-systems of values

Ideational
(reasoning, rational, spiritual, ideological)

Sensual
(experiential, sensory, materialistic)

Subsystems of mixed types of values

Ascetically-ideational

Actively ideational

Pseudo-ideational

Idealistic
(ideal, integrative, harmonious)

Active-sensory

Passive-sensual

Cynical and sensual

Appendix 4

Basic definitions of values as an object of research

Definition values	Characterisation	Author , source.
Properties (valuable properties)	- something, such as an object, i.e. the aspect of something that distinguishes or, on the contrary, unites that object with other objects.	Wikipedia. https://ru.wikipedia.org/wiki/Ценность (Date of access: 22.01.2022)[474] ;
Apparitions • Sensual • Rational	Values are the "world of phenomena", i.e. all that is perceived, whether sensual or rational (Lotze);	Stolovich L.N. Beauty. Goodness. Truth. M., 1994. P.123.[475] ,
Abstractions are concrete	i.e. the results of mental separation of important properties and relations of some things or phenomena from others On the contrary, values can be concrete. The notion of such values is used by M. Rokic in his diagnostic procedure	What are abstract values. Methodology "Value Orientations" by M. Rokich. https://voplaw.ru/chto-takoe-abstraktnye-cennosti-metodika-cennostnye-orientacii-m-rokicha.html (Date of reference: 22.01.2022).[476] .
Ideals	i.e. the most perfect thing to be aspired to and imitated: "The ideal is characterised as a key value" (Timofeeva S.V.)	Timofeeva S. V. To the question of the interrelation of values and ideal // Vestnik KrasGAU. 2009. №5. C.188. [477];
Objects • Spirituals • Material	- objects to which the subject's practical or cognitive activity is directed, having significance, importance of value for a person or society;	Tebyakin A.A. Systematisation of property values as objects of management // Innovations and Investments. 2017. №10. C. 192. [478]
Benchmarks	- i.e. as a set of measuring instruments allowing to diagnose norm and deviation from the specified characteristics to which they aspire (should aspire);	Rakov S.E. Human values - a benchmark for the design of overdue social changes // Actual Problems of Humanities and Natural Sciences. 2017. №7-2. [479];
Criteria	- assessment of significance, importance, price, e.g. used to determine differences between generations;	Vinokurova U. A., Lambayeva I. A. Modernisation values as generation criteria // Scientific Bulletin of MSTU GA. 2014. №203. C. 96.[480] ;
Objectives	- i.e. final results of operations	Lebedeva E. A. Interrelation of goals and values // International scientific review. 2016. №2 (12). [481],

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[477] Timofeeva S. V. To the question of the interrelation of values and ideal // Vestnik KrasGAU. 2009. №5. C. 188.

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[479] Rakov S.E. SOCIAL VALUES - an ETALON FOR PROJECTING IMPROVED SOCIAL CHANGES // Actual Problems of Humanities and Natural Sciences. 2017. №7-2. (date of address: 22.01.2022).

[480] Vinokurova U. A., Lambayeva I. A. Modernisation values as generation criteria // Scientific Bulletin of MSTU GA. 2014. №203. URL: C. 96.

[481] Lebedeva E. A. Interrelation of goals and values // International scientific review. 2016. №2 (12).

Means	- tools and methods of action	Zavyalova L. P., Meshkova I. V. Value of education in the view of modern students: dialectical unity of value, purpose and means // Humanities. 2021. №1 (53).[482]
Results	- i.e. the final products achieved in the process of activity;	Svirina A. A. Creation of social value as a result of the development of entrepreneurial activity // Socio-economic phenomena and processes. 2011. №1-2. [483];
Positive values	- goodness, freedom, beauty;	Tugarinov V. L. Theory of Values in Marxism. L., 1968.[484] ,
Negative values	- everything that prevents the attainment of the absolute fullness of being (evil, the ugly, etc., "everything connected with the category of imperfection");	Pogudina T. V. The problem of the world of value in the philosophy of N. O. Lossky (history and modernity) // Izvestiya TulSU. Humanities. 2017. №1. C. 128.[485] ;
Anti-values	Opposing value orientations	T. Parsons
As the future	- dreams, goals;	Trofimchuk A. G. Human values of the image of a man of the future and his upbringing // Proceedings of SPbGIK. 2014. № 203. C. 285. [486]
Like the real thing		Razumov V. I. Problems of philosophy: past, present, future // Vestnik Tom. gos. un-ta. Philosophy. Sociology. Political science. 2017. №40. [487]
Like the past		Shcherbakov D. A. Values of the past as a source of value determination of historical representations // Vestnik OGU. 2010. №7 (113). [488], Ivolga E. V. Values of the past in the modern information space // Philosophical problems of information technologies and cyberspace. 2010. №1. C. 80.[489] .
Any fact	"Social values or values are any fact with content and meaning for a certain social group that can become an object of activity."	Thomas S., Znaniecki F. The Polish Peasant in Europe and America by

[482] Zavyalova L. P., Meshkova I. V. Value of education in the view of modern students: dialectical unity of value, purpose and means // Humanities. 2021. №1 (53).

[483] Svirina A. A. Creating social value as a result of the development of entrepreneurial activity // Socio-economic phenomena and processes. 2011. №1-2.

[484] Tugarinov V. L. Theory of Values in Marxism. Л., 1968.

[485] Pogudina T. V. The problem of the world of value in the philosophy of N. O. Lossky (history and modernity) // Izvestiya TulSU. Humanities. 2017. №1. C. 128.

[486] Trofimchuk A. G. Human values of the image of a man of the future and his upbringing // Proceedings of SPbGIK. 2014. № 203. C. 285.

[487] Razumov V. I. Problems of philosophy: past, present, future // Vestnik Tom. gos. un-ta. Philosophy. Sociology. Political science. 2017. №40.

[488] Shcherbakov D. A. Values of the past as a source of value determination of historical representations // Vestnik OGU. 2010. №7 (113).

[489] Ivolga E. V. Values of the past in the modern information space // Philosophical problems of information technologies and cyberspace. 2010. №1. C. 80.

		William Vol. 1, part. 1. N-I. 1918.P. 21 [490]
Any natural a thing can suddenly become valuable	Values are all phenomena that do not belong to the natural natural world. But any natural thing can suddenly turn into a value if it is given a meaning. Therefore, it is possible to understand what is a value only through the study of social action; it is in action that a thing can be discovered as a value, or a value as just a thing - depending on the goals and aspirations.	Chesnokova V. Florian Znaniecki. Values and attitudes file:///C:/Users/Admin/Desktop/Olesya%20Forging%20new%20values/Publications%20to%201.1/Florian%20Znanetsky.%20Values%20and%20establishments.%20-%20analytical%20portal%20POLIT.RU.pdf (Date of access: 12.07.2022) [491]

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[490] Thomas S., Znaniecki F. The Polish Peasant in Europe and America by William Vol. 1, part. 1. N-I. 1918.P. 21

[491] Chesnokova V. Florian Znaniecki. Values and attitudes file:///C:/Users/Admin/Desktop/Olesya%20Forging%20new%20values/Publications%20to%201.1/Florian%20Znanetsky.%20Values%20and%20attitudes.%20-%20analytical%20portal%20POLIT.RU.pdf (Date of access: 12.07.2022)

Appendix 5

Presentations of modern authors regarding professional values and their classification

Author , source.	What are professional values?	Classification of professional values
Tulupov V. V. Professional values and professional competence of journalists // Journalist Yearbook. 2016. №5.	benchmarks and means to achieve results C. 22.	- social and professional - professional groups - individual "existing in pedagogy"
Bailuk V. V. Values of professional self-realisation of personality // Pedagogical Education in Russia. 2015. №3.	are values of productive professional self-realisation of a person, as the latter is the highest form of manifestation of professional activity (professional self-realisation can be manifested in a destructive form). C. 21.	- intrinsic values of professional fulfilment (terminal and instrumental) - internal and external values at the same time - external values of professional activity
Ш. Schwartz and H. Shalom (See Minyurova S. A. Psychology of human self-development in the profession. M. Sputnik Company, 2008. C. 298.)	Cultural value orientations represent ideals. They promote interrelationships between different aspects of culture. Those aspects of culture that are incompatible with them will provoke tension, criticism and pressure to change them. Subgroups within societies profess conflicting values. The adaptation of societies to epidemics, technological development, increasing prosperity, contact with other cultures, wars and other exogenous factors leads to changes in the values of culture	professional values include: 1) internal (personal growth, autonomy, interest, creativity, etc.); 2) external (salary and security); 3) social (interaction with people and contribution to society); 4) power (prestige, authority, influence) [Minyurova A.S. p. 89].
Golovakha E. I. Life perspective and value orientations of personality // Psychology of personality in the works of Russian psychologists / Compiled by L. V. Kulikov. L. V. Kulikov. SPb. Peter, 2000. C. 256-269.)	These are the values of productive professional self-realisation of a person, as the latter is the highest form of manifestation of professional activity (professional self-realisation can be manifested in a destructive form).	Three groups of professional values: - values that can only be realised directly in professional activities, - values that are realised at the expense of professional activities - values that can can only be realised outside of professional activities
A. A. Larionova-Krechetova (See Minyurova S. A. Psychology of human self-development in the profession. M. Sputnik Company, 2008. C. 298)	Value as significance, meaning of certain objects, processes, phenomena for a person; as the goals of human existence, serving as leading principles in life; as value relations; as one of the forms of existence of semantic formations; as an ideal model of the proper, indicating the direction of desirable transformation of reality; as the highest meanings of human existence, etc.	in professional activity distinguishes two groups of values: "external" and "internal". The internal ones include those that are associated with certain relations of the labour subject to the object of professional activity, its process and result, as well as with the personal qualities of the labour subject [9, с 90-91].
Kokh I.A., Alekseeva L.A. Professional-value	Professional value orientations, understood by the author as an	Professional value orientations include attitude to education as the first stage of

orientations of student youth on the example of the study of priorities in the structure of terminal and instrumental life values of students // Management Issues. 2018. №4 (34).	integrative personal structure that determines the professional consciousness of a specialist, characterising his attitude to the profession, reflecting the content side of the orientation of the personality to the values of professional activity, contribute to the effectiveness of adaptation of the future specialist to the processes of entering the profession and professional self-realisation in general.	professionalisation, attitude to significant values of work. C. 115
Zeer, E.F., Pavlova, A.M., 2008. Psychology of vocational education: practical work. Publishing Centre "Academy", Moscow, p. 144.	Value orientations express a person's conscious attitude to social reality and specify the motivation of behaviour, significantly influencing all aspects of professional activity.	Structure of value orientations of the personality, combination and degree of preference for others values allow us to define the goals that a person's professional activity is aimed at achieving.
Derkach A. A. Akmeological bases of professional development. Voronezh: MODEK, 2004. 752 с.	values exist in the form of value orientations, the system of which determines the content of the personality's orientation and forms the basis of its relations, the core of motivation, life concept and meaning of life.	The following can be listed: awareness and respect for social professional role, presence of social motivation of labour, value of labour activity, interest in professional and corporate cultures, need for education and self-education.
Afdal HW, Afdal G. The making of professional values in the age of accountability. European Educational Research Journal. 2019;18(1):105-124.	the terms "professional values" and "professional ethics" are interchangeable. This means that we understand ethics as theories of goodness and justice that include different traditions. Moreover, we understand values and ethics as processes and perspectives of social practices rather than separate fields. Sahlberg, P (2010) Rethinking accountability in a knowledge society. Journal of Educational Change 11(1): 45-61.	The dichotomy is also constructed as a conflict between two sets of values, neoliberal and traditional professional (Crick, 2008; Ball, 2013; Mausethagen, 2013). On the one hand, traditional professional values, are shaped in key concepts such as caring (Ball, Olmedo, 2013), fairness (Trujillo, Woulfin, 2014), democracy (Trujillo, 2013), responsibility (Solbrekke, Englund.) , 2011). On the other hand, neoliberal, market-orientated values such as competition, individual freedom, "what works" and performativity (Ball, 2013; Apple, 2016)

Appendix 6

Holland's classification of occupational types

Values of professions	Main characteristics according to Holland	Examples of professions
Traditional	*Activities:* - clearly structured; - stereotypical, concrete, practical; - clear schedules, order; - working according to instructions and given algorithms; - avoiding uncertain situations. *Social Characteristics:* - traditional social activism; - adopting a management position; - doesn't show criticality, originality; - conservative, dependent, doesn't like changing activities; - poor organisational skills. *Psychological Characteristics:* - the ability to process numerical information; - stereotypical approach to problems; - conservative in nature; - physical exertion; - subordination, dependence, adherence to customs, conformity, compliance; - a predominance of maths ability. *Professional environment*: Economics, communications, calculations, accounting, clerical work requiring ability to process routine information and numerical data. *Typical hobbies:* Collecting stamps, coins. Customising models. Home improvement projects. Participation in civic and community organisations. Games with clear and precise rules.	Accountant, financier, economist, clerical clerk, librarian, Controller, process chemist, draftsman, proofreader, logistician, merchandiser.
Social	*Activities:* - the people, the fellowship; - Establishing contact with others; - a detachment from intellectual concerns; - active, but often dependent on the opinion of a group of people; - Problem solving with reliance on emotions, feelings. *Social Characteristics:* - has social skills, needs contacts; - the urge to instruct and educate; - humanity, humanity. *Psychological Characteristics*: - communication skills; - the ability to empathise; - an adaptation; - the predominance of linguistic ability; - good verbal skills. *Professional environment:* Education, health care, social welfare, service, sports. Situations and problems related to the ability to understand people's behaviour, requiring constant personal communication, persuasive skills. *Typical hobbies:* Organising the entertainment of others. Attending social events, gatherings. Volunteering to do charitable and social work.	Physician, teacher, psychologist, tour guide, journalist, sales manager, DJ, TV presenter.

Entrepreneurship	Activities: - choosing goals that allow for energy, enthusiasm, impulsiveness; - loves adventure; - dominance; - loves a confession; - likes to lead; - dislike practical labour and activities that require intellectual effort, diligence, motor skills and concentration; - Deals well with leadership, status and power issues; - aggressive and adventurous; - has good verbal abilities. *Social Characteristics:* - supersocial; - leadership, management; - recognition, power, personal status; - interest in economics and politics; - good organisational skills. *Psychological Characteristics*: - energy, impulsiveness, enthusiasm, - enterprising, aggressive, - risk appetite, - optimism, - self-confidence, - the predominance of linguistic ability, *Professional environment: Dealing* with unclear tasks, dealing with different types of people in a variety of situations, requiring the ability to understand the motivations behind other people's behaviour and eloquence. *Typical hobbies:* Membership of clubs, organisations, parties. Attendance at meetings, conferences. Sporting events as a spectator or participant. Prestigious holidays, entertainment. Organising parties, entertainment. Political activity.	Businessman, marketer, manager, director, superintendent, journalist, reporter, diplomat, lawyer, politician, sales manager, stockbroker.
Realistic	*Activities:* - present-centred; - dealing with specific objects (things, tools, machines); - favour activities that require motor dexterity, specificity; - practical use, activities requiring physical development, agility. *Social Characteristics:* - unsocialised; - aggressive; - Lack of communication orientation. Social skills are minimally needed and are related to the reception-transmission of limited information. *Psychological Characteristics:* - developed maths and non-verbal abilities; - activity, business savvy, perseverance; - rationality, practical thinking; - good motor skills; - spatial imagination; - technical ability; - emotionally stable. *Occupational environment*: Technology, agriculture, military. Solving specific tasks requiring mobility, motor skills, physical strength. *Typical hobbies:* Restoration of old mechanisms. Repair, construction, assembly of various devices. Construction and restoration works. Farming, arrangement of a summer cottage, country house. Gardening, horticulture, hunting, fishing, tourism, physically dangerous sports.	Mechanic, electrician, Engineer, Farmer, zootechnician, geologist, engraver, agronomist, gardener, car mechanic, chauffeur, the pilot, policeman, security guard, welder, dentist.
Research	*Activity:* - analytical, rational, abstract thinking; - ideas are more important than the practical result; - Independence; - solving intellectual creative problems, - is original; - mental labour, theoretical values prevail, likes to solve problems requiring abstract thinking, intellectual. Verbal and non-verbal abilities are harmoniously developed. *Social Characteristics:* - **unsocialised;** - Lack of communication orientation in activities;	Physicist, astronomer, linguist, programmer, microbiologist, architect, economist (auditor, analyst), pharmacist, art historian, historian, ethnographer, archaeologist.

	- communication is informational in nature. Interpersonal relationships play a minor role, although you need to be able to communicate and absorb complex ideas. *Psychological Characteristics*: - an analytical mind; - Independence and originality of judgement; - harmonious development of language and maths abilities; - criticality; - curiosity; - a penchant for fantasy; - an intense inner life; - low physical activity. *Professional environment:* Science. Problem solving requiring abstract thinking and creativity. *Typical hobbies:* Work (the explorer type is often completely absorbed in their work). Complex activities (yachting, scuba diving, mountaineering). Computers, programming, reading (fiction, scientific articles).	
Artistic	*Activities:* - reliance on emotions and feelings, imagination, intuition; - activities that require motor and verbal skills; - self-expression and creative activities, - avoiding activities that require physical strength, regulated working hours, following rules and traditions. *Social Characteristics:* **- is unsocial in the sense that it does not adhere to the conventions of society;** - independent in his decisions, original; - a high ideal of life with an affirmation of one's self. *Psychological Characteristics*: - imagination and intuition; - an emotionally complex view of life; - independence, flexibility and originality of thinking; - good motor skills and perception. *Professional environment:* Fine arts, music, literature. Problem solving requiring artistic taste and imagination. *Typical hobbies:* Photography. Drawing. Painting. Attending dance and music concerts, theatres, museums. Composing poems, short stories. Artistic collecting. Playing musical instruments. Dancing, singing.	Musician, artist, make-up artist, photographer, actor, director, designer.

Appendix 7

Pilot study of digital values among professionals of different training profiles

The survey on measuring digital values among specialists of different training profiles was conducted in February 2022. The sample was students of journalism, sociology and programming. A total of 310 people took part in the survey. Representatives of humanitarian specialities - journalists - 105 people, sociologists - 30 people, representatives of technical disciplines - programmers - 265 people. *It is important to note that the development of digital technologies and digital competences as an actual need in the recorded sample is marked as significant for programmers, and the result of digital activity expressed in a digital product is significant for students in the humanities. Programmer students are more involved in digital processes and are producers of digital products, while journalism and sociology students are their consumers.*[492]

The strategy of the empirical study of identifying the digital values of students of different training profiles was based on a quantitative method - an online survey, where respondents had to express their opinion about the digital values of modern society. Thus, the answer to the question allowed us to assess the perceptions of respondents of different professional orientations about the changes in society with the onset of digitalisation, their personal preferences and new values.

By analogy with the classification of values in the methodology of M. Rokic and Bransky, digital values in the present case were classified into three groups: values-goals (such perceptions of one's digital values that reveal their semantic characteristics), values-means (allowing at the level of technologies and methods to achieve these goals) and values-results. [20]

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[492] Deryugin P.P., Bannova O.S. Values of students of different training profiles in the conditions of digitalisation of society: results of the empirical study // Discourse. - 2022. - № 5. - C. 68-80.

Digital transformation is first and foremost a transformation of awareness, i.e. awareness of change, competence, erudition, orientation, awareness, certain knowledge and skills, preparedness and digital literacy. The general model of "digital society" includes such components as "digital economy", "digital politics", "digital culture" and "digital personality". [17]

As a result of the empirical study, digital values were organised into six subgroups, depending on their orientation: social, political, moral, economic, material, personal. This classification model combines several different classifications reflected earlier in the works of E. Spranger, D.A. Leontiev, G. Vyzheletsov, V.P. Tugarinov, Toffler, N.A. Berdyaev. [26, 15, 4, 23, 21]

Results and discussion. The results of this study have generally found a number of scientific confirmations in the publications of other authors on the problems of measuring the digital values of students of different training profiles in the conditions of the formation of the information society. The most significant results and characteristics of students' digital values in the digital society are presented below.

Outcome 1. Students' awareness of the advantages and benefits of digitalisation, which form the basis of *their* value orientations, *reflects their thorough involvement in the transformation of socio-cultural reality.* In the present study, the majority of respondents - 58% have perceptions of the coming digitalisation. (Table 1).

At the same time, only 16% of respondents point out the importance of traditional values, which are certainly relevant, but do not reflect the trends of the changing world.

Table 1. Students' understanding of digital values

	Sociologists	Journalists	Programmers	Total
Have an understanding of digital values	74%	46%	52%	58%
Mixed perceptions of digital values	23%	30%	26%	26%

Do not have an understanding of digital values	3%	24%	22%	16%

Statistical analysis of the respondents' answers allows us to draw some conclusions about the trends in the formation of students' digital values in the information society. (Table 2)

Table 2. Respondents' perceptions of the values of the digital society

№ n/a	Name of value digital society	Number of respondents who indicated this value
1.	Availability of information	171
2.	Communication via the Internet	82
3.	Cryptocurrencies, NFT	73
4.	Digital products	69
5.	Digital literacy	67
6.	Security of the digital environment	58
7.	Digital ethics, politeness and mutual respect online	49
8.	Quick exchange of information	48
9.	Freedom on the Net	46
10.	Technology development	44
11.	Opportunities for remote work and study	44
12.	Automation and optimisation of activities, social mobility	42
13.	Online privacy and anonymity	41
14.	Information handling skills	40
15.	Ability to adapt quickly	40
16.	Flexibility of thinking	33
17.	The need to protect personal data and intellectual property	32
18.	Critical thinking	27
19.	Access to technology and products	26
20.	Creativity	24
21.	Ability to learn new things	23
22.	Comfort and high quality of life	23
23.	Preserving individuality in the digital environment	22

24.	Responsibility	20
25.	Popularity in social networks	16
26.	Customer-centricity of digital services/products	16
27.	Interest in ICTs	15
28.	Quick decision-making skills	13
29.	Data-driven decision-making	10
30.	Loyalty to other social groups	7

Students consider information to be the main value of the digital society as a key factor in the accumulation of human capital. At the same time, a significant criterion is its openness and accessibility. For software students, skills in working with information are the most important (values-means), and for journalists, reliable, high-quality information is an advantage (values-goals).

Knowledge orientation, digital literacy, inter-networking in cyberspace, digital products, transformation of social relations - all these changes are global in scope and diverse in forms of manifestation and content. It is important to notice that modern students do not name the importance of developing communication skills, while singling out network communication in the category of "value-targets". Virtual space in the digital society make interaction "freer" than ever. As many respondents point out, modern people, on the path of transformation feel more lonely, tired and more stressed, despite the diversity of communication, the convenience of connectivity and openness. On the other hand, it is the convenience and simplicity of social interaction in the virtual environment that tends to "simplify" traditional values such as attitudes towards friendship, family, etc.

Student journalists emphasise the need to control the digital environment and improve cybersecurity practices. In addition, they emphasise the importance of expanding economic ties and production opportunities, ensuring the sustainability of digital environments that improve the quality of relationships in society.

Unlike students of humanities, students of programming are interested in ICT, information and knowledge stored in the network. The importance in the digital society

of such qualities as the development of emotional intelligence, politeness and friendliness in the digital space, leadership, risk-taking, openness to new things, multitasking, high concentration, courage and curiosity is noted.

Result 2. Humanities students more often name values - goals and results, programmers values - means. Digital values of students-humanities and students-programmers in the most different spheres of activity were formed with some peculiarities.

First of all, the increase of instrumental values of students-programmers became significant. As respondents themselves noted, with the growth of data exchange speed, there is a need for knowledge and methods of working with information. To a large extent, intensive mastering of new digital technologies and computer literacy is a forced measure, without which one cannot do without in the digital world.

Table 3: Dynamics of students' digital values by functional value

	Sociologists	Journalists	Programmers	Total
Values - goals	56	135	353	544
Values are the means	47	74	354	475
Values - results	22	86	211	319

Despite the fact that software students are producers of digital products, they are not so much concerned with the result of their activities in the digital society as with the process of product development itself. Against this background, the significant increase in value-means among technical students indicates their greater involvement and awareness of digitalisation.

Result 3. With the development of digital technologies related to the characteristics of students' lives and activities, digital values will affect areas of orientation such as political, material and personal.

The entire set of digital values (goals, means, results) was divided into six groups according to its orientation, shown in Table 4. Each group included a set of values that were realised in a given direction.

The most frequent manifestation of digital values is in the material sphere. Students note that the result of a successful digital society is high-tech products, NFTs, cryptocurrencies, digital assets, virtual wallets.

Table 4. Sociodynamics of values orientation depending on the content characteristics

Areas of value orientation	Sociologists	Journalists	Programmers	Total
Political	34	69	244	347
Economic	8	25	49	82
Moral	7	17	31	55
Social	14	36	126	176
Material	45	89	255	389
Personal	26	59	211	296

The most frequent manifestation of digital values is in the material sphere. Students note that the result of a successful digital society is high-tech products, NFTs, cryptocurrencies, digital assets, virtual wallets.

Digital values directed at the political sphere are related to the enforcement of human rights in a regulated digital space, civil rights and the nature of the political regime. On the one hand, technology and digital media have brought important changes to many basic values of freedom, justice, democracy, social solidarity, social security. The digital society brings a comfortable, new and modern life never seen before, but it threatens the most basic rights and security of ourselves. With the rise of high-tech crime, there is a need for cyber security and information privacy.

The moral orientation of digital values is of least interest to students. Despite this, students of software engineering say that it is important to preserve traditional moral norms, which undergo significant changes in the virtual environment, where the

de facto "impersonalisation" of the user gives freedom of action and expression. They point out that it is crucial to create an ecological digital space based on a new, so-called "digital" ethics, as well as a sense of responsibility and mutual respect.

The generalisable conclusions of the study are as follows:

1.   Representation of digital values of students of different training profiles as an object of sociological research involves the identification of significant changes and preferences in political, economic, social, moral, material and personal orientation. The values of the digital society is a topic that has great appeal in research and is a relatively new issue in both the perception and practice of the world's scholars. Rapid social changes have affected all spheres of people's lives and are difficult to describe within the framework of existing sociological theories;

2.   The measurement of digital values of students of different training profiles is based on the diagnosis of such indicators that record changes in the mastering of digital technologies, the nature of the direction and intensity of changes, the features of social changes, the nature and degree of students' inclusion in the digital society, and their digital competence. The majority of students of different training profiles have ideas about the coming digitalisation, in addition, students of the humanitarian direction more often name values - goals and results, programmers values - means;

3.   The digital society creates a new qualitative change in the system of social values, social culture and ethics, new trends appear: social communication, social interaction and environment acquire the status of virtual. In order to interact effectively in the digital environment, students of different training profiles should have knowledge of digital literacy and understanding of digital transformation, have ideas regarding the construction of digital society and have high adaptability to it. It is also necessary to practice new standards and principles of behaviour in the digital environment.

The experience of sociological research into the study of digital values of students of different training profiles has confirmed its relevance and expediency. The results of using a quantitative method, analysing the results of the study and

summarising the data on the orientation of digital values allow us to characterise the social changes of the new times and show the unique features of the formation of value preferences of students of different training profiles of respondents - in our case, students of humanities (sociologists, journalists) and technical (programmers). The present study attempts to outline digital values and identify the features of their formation in specialists of different profiles. These results allow us to compare the digital society and IT specialists by the dynamics of comparative indicators of "digital" and "social" values. (Figure 1)

Figure 1: Dynamics of digital and social values in the digital society

Based on the results of the current indicators, it is possible to identify value differences between IT professionals in Russia, China, USA and Brazil, as well as with representatives of other professional groups in relation to their level of technological and social development.

It is important to note that the study of the sociodynamics of IT specialists' values should take place not only within the IT group, but also in the social environment among many other significant social, cultural, political and economic factors that make up the macrosociological context of identification of the professional construct of a person. Therefore, the empirical study as a whole is designed as a combined set of methods reflecting the specificity of values and value orientations of both IT specialists and other groups of society in contact with the IT industry.